The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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10 East Lovell, £10¾.	60 Prince of Wales, 12s 6d	50 W. Tankerville, 13s.
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75 Frontino, 10s. 9d.		100 Yorke Peninsula.

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10 Cardiff & Swan., £4¾.	30 Frontino, 7s. 6d.	30 Thorpe's Gawber.

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50 Birdseye Crk., £2¼.	10 East Lovell, £10 7s. 6d	15 Roman Gravels, £14.
25 Cardiff and Swansea. £3 11s. 3d.	20 Eberhardt, £4 16s. 3d.	20 Sweetland Crk., £2⅞.
20 Cedar Creek, £1½.	50 Flagstaff, £1 18s. 9d.	30 So. Condurrow, £3¾.
70 Clee Hill, 9s.	30 Ladywell, £2⅞.	20 Tankerville, £7¼.
45 Chontales, 10s.	70 Marke Valley, 19s. 6d.	100 Van Consols, £2.
	50 Pennerley, £1 13s. 9d.	25 Wheal Kitty, £5 2s 6d
	25 Richmond, £6¾.	

SPECIAL BUSINESS in the Live Stock Insurance Company of Great Britain (Limited), and the Crystal Palace District Cemetery Company (Limited).

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Bampfylde	£ 2	£ 2½	Penstruthal	10s.	12s.
Birdseye Creek	2⅛	2¼	Prince of Wales	9s. 6d.	11s. 6d.
Carn Brea	55	56	Richmond	£ 6½	£ 6¾
Cedar Creek	1	1⅛	Roman Gravels	13⅞	14⅛
Chapel House Colliery	4⅜	4½	South Aurora	9s.	11s.
Chontales	8s.	10s.	South Carn Brea	1	1⅛
Clee Hill Colliery	7s.	9s.	South Condurrow	3	3¼
Cook's Kitchen	9	9½	South Roman Gravels	11s.	13s.
Devon Great Consols	1¼	1½	Sweetland Creek	2⅞	3
Dolcoath	45	46	Tankerville	7	7¼
Eberhardt	4½	4¾	Tecoma	7s. 6d.	10s.
East Lovell	10	11	Tincroft	29	30
Emma	1¾	1⅞	Unity Wood	2s.	3s.
Flagstaff	1⅞	2	Van	22½	25
Gold Run	9s.	11s.	Van Consols	2⅛	2¼
Ladywell	2¾	2⅞	West Chiverton	1¾	2
Last Chance	1	1⅛	West Tankerville	10s.	15s.
Marke Valley	18s. 6d.	21s. 6d.	Wheal Grenville	5	5½
Penhalls	1¾	2	Wh. Kitty (St. Agnes)	5	5¼
Pennerley	1⅝	1¾	Wheal Uny	1¾	2

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25 Bampfylde, £2⅛.	50 Lovell, 16s. 6d.	20 Russia Copper, £3.
70 Bog, 5s. 6d.	40 Marke Valley, 16s. 9d.	10 Roman Gravels, £13½
10 Birdseye Creek, £2.	50 Mid-Moonta, £3.	80 Rossa Grande, 1s.
2 Carn Brea, £56.	60 Melindur, £3.	40 Sierra Buttes, £2¼.
20 Cedar Creek, £1.	5 Minera, £15.	50 South Aurora, 7s. 6d.
10 Chapel House, £4½.	50 Malabar, 13s. 9d.	20 So. Carn Brea, £1½.
20 Cardiff & Swan., £3.	40 Malpaso, 15s.	25 So. Roman Gra., 12s. 6
50 Cathedral, £1½.	80 Medlyn Moor, 16s.	20 Tankerville, £7.
2 Dolcoath, £46.	30 New Quebrada, £3.	8 Thornhill Reef, 15s.
20 Emma, £1½.	80 New Pacific, 6s. 9d.	11 Thorp's Gawbsr, £13.
5 East Lovell, £10½.	25 New Sharlston, £9½.	30 Van Consols, £2½.
30 East Grenville, 8s. 6d.	50 Old Treburgett, 13s 9d	50 West Chiverton, £1¾.
50 East Basset, £9.	50 Plynlimmon, 3s. 9d.	70 West Maria, 6s. 9d.
50 Flagstaff, £1¾.	60 Pennerley, £1½.	10 West Basset, £8.
10 Great Laxey, £11½.	10 Providence, £4¾.	10 Wheal Kitty, £5¼.
30 Glasgow Caradon, £1½	50 Pedn-an drea, £8.	25 West Tankerville, £1.

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50 Bog, 3s.	80 Malpaso, 16s. 6d.	45 Thornhill Reef, 9s. 6d.
30 Cardiff & Swansea.	50 Marke Valley, 20s.	25 Thorp's Gawber, £13¼
75 Chapel House Col. £4½	35 New Sharlston.	100 Tecoma, 9s.
40 Chicago.	40 New Quebrada, £3⅜.	50 Tyllwyd, 21s.
70 Chontales, 19s. 9d.	60 N. Pr. Patrick, 18s. 6d	25 Tankerville, £7⅜.
70 Cedar Creek, 22s. 6d.	90 Parys Mountain, 6s 6d	4 Tincroft, £30¼.
60 Clee Hill Col., 8s. 6d.	40 Pennerley, 33s.	50 United Bituminous, 9s
5 Cook's Kitchen, £9½.	100 Penstruthal, 12s.	60 Unity Wood, 3s. 3d.
10 Devon G. Cons., £1½.	50 Positive Assurance 19s	10 Van, £22½.
5 Dolcoath, £46.	70 Port Nigel.	70 Van Consols, 41s. 6d.
65 Don Pedro, 7s. 9d.	130 Port Phillip, 13s.	40 Wedgwood Coal.
15 East Lovell, £10½.	100 Prince of Wales, 11s. 6	40 Welsh Freehold.
35 Eberhardt, £5¾.	30 Roman Gravels, £14½	30 W. Tankerville, 12s. 6d
30 Emma, 26s. 3d.	500 Rossa Grande, 1s.	5 West Tolgus, £69¼.
45 Flagstaff, 37s. 6d.	75 Rica, 6s. 6d.	5 West Basset, £8¼.
100 Frontino, 11s.	25 Richmond, £6 16s. 3d.	80 West Maria, 7s. 6d.
45 Glaisdale Quarry, 10s.	20 Russia Copper.	35 W. Esgair Lle, 38s. 9d
100 Gold Run, 10s. 9d.	75 Sierra Buttes.	30 West Gorland.
45 Gawton.	40 Silkstone Fall, off. wtd	25 Wheal Grenville, £5¾
30 Hingston, 22s.	100 South Aurora, 9s. 9d.	10 Wheal Kitty, £5¾.
70 Javali, 6s.	35 So. Carn Brea, 23s. 9d	10 W. Chiverton, 41s.
50 Ladywell, £2¾.	20 So. Condurrow, £3.	80 Yorke Peninsula.
25 Last Chance, 21s. 9d.	25 So. Prince Patrick, 40s	

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MR. JOHN WALFORD, Edgbaston.
} Directors of the South Prince Patrick Lead Mining Company (Limited).

BANKERS.
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OFFICES,—47, ANN STREET, BIRMINGHAM.
SECRETARY (pro tem.)—MR. HENRY HOWELL.

This company has been formed for the purpose of acquiring and working the St. David's Lead Mines, which are situated a little more than a mile from Holywell, in Flintshire, in a mineral district highly famed from the well-attested fact that millions of pounds sterling have been realised in profits by working the lead mines in the limestone formation wherein is situate the St. David's sett.

The directors, before inviting the public to invest, decided to make a trial of the property, so as to be assured that there was a probability of a success, and time has been allowed by the vendor for that purpose, the result of the operations being very satisfactory from the fact that a lode is now being worked and lead raised, which it is expected will of itself yield enough ore to make a profit.

There are three other very strong and well-known lodes, running east and west through the sett. These lodes have already yielded many thousands tons of lead to the east, and it is expected they will also be productive in this sett.

The work already done is as follows:—

A shaft about 30 yards deep is sunk into a prooductive north and south lode.
A shaft 40 yards deep sunk on a parallel lode.
A shaft, with an excellent whimsey on it (all in first-rate order), 80 yards deep, sunk on the renowned Milwr lode, which has made large profits to the east of this seti.
Another shaft is sunk to a depth of 40 yards, near to the junction of two main east and west lodes with a north and south lode. This will be another trial to be continued in further developing the mine, and Capt. Thomas Pierce and Capt. John Jones, of the South Prince Patrick Mine, say it will be the best trial in Flintshire.

It is also known that there is a flat near to the whim-shaft, from which some lead has been got, and it is intended to open it in proper course, as these flats sometimes yield an enormous quantity of lead from a comparatively small area.

Another important feature is that there are swallows in the ground below 80 yards, which will take the water, and there is also plenty of surface water for washing and dressing the ore.

About 12 months since so ne of the directors of this company had the pleasure of bringing out another mine—viz., the South Prince Patrick (also near Holywell), which has proved so successful an enterprise as to be already in the Dividend List, and the shares are now selling at about 100 per cent. premium. It is believed the prospects of the St. David's Mines are even greater than those of the South Prince Patrick were at that time, inasmuch as one only of the lead-bearing lodes discovered will, it is believed, give profits on capital invested, and there can be no doubt that if, on further working the east and west lodes show anything like what they have done to the east of the sett, the St. David's shares will soon command a high premium.

As a portion of the required capital is already privately subscribed, only 3000 shares are now offered for public subscription.

The only agreement entered into is dated Aug. 15th, 1874, between Henry Sunderland of the one part, and Henry Howell, of 47, Ann-street, Birmingham, on behalf of the company of the other part, whereby the said Henry Sunderland agreed to sell his interest in the said mines for the sum of £6000, payable £1300 in cash and £4700 in fully paid-up shares of the company.

Samples of the ore, and a plan of the property, can be seen at the office of the company, where copies of the captains' reports and all other repuisite information may be obtained.

Applications for shares should be made to the Secretary of the company, 47, Ann-street, Birmingham.

FORM OF APPLICATION FOR SHARES.

To the Directors of the St. David's Lead Mining Company (Limited).

GENTLEMEN,—Having paid to the sum of £ , being a deposit of 10s. per share on shares in the above company, I request that you will allot to me that number of shares, and I hereby agree to accept such shares, or any less number you may allot me, on the conditions stated in the prospectus, and subject to the Memorandum of Association of the company.

Name (in full) .....
Address .....
Profession or business .....
Date ..... Usual signature .....

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Registration of New Companies.

The following joint-stock companies have been duly registered:—

STEAM FUEL ECONOMISER (Limited).—Capital 80,000*l.*, in 5*l.* shares. To acquire various inventions for the economising of coal and for the preservation of boiler-plates. The subscribers are—S. Madden, R.N., Blenheim House, Hestor, 20; W. Yates, Princes-street, Storey's Gate, 20; J. C. Bromfield, Brighton, 20; J. Cobham, Capt. 47th Regiment, 20; D. M. Deuar, 4, East India-Avenue, 20; J. E. Leyland, 216, Piccadilly, 20; J. Marten, 4, Victoria Grove, 20; J. M. Erskine, 17, Fulham-road, 20.

HAMPSHIRE FISHERIES AND RESERVOIRS COMPANY (Limited).—Capital 5000*l.*, in 5*l.* shares. To establish fish ponds and reservoirs for breeding oysters, and every description of fish in Great Britain or any part of Europe. The subscribers (who take one share each) are—C. W. C. Hutton, 5 and 6, Newgate-street, E.C.; J. B. Baring, 100, Cannon-street; Francis Peek, 4, Fenchurch-street; T. Braby, Mount Henley; G. C. Bell, Christ's Hospital; E. Milner, Dulwich Wood; C. J. Benson, Milton-street, Fore-street.

GLYN LEAD MINING COMPANY (Limited).—Capital 20,000*l.*, in 2*l.* shares. To acquire the Glyn Mine, Montgomeryshire. The subscribers are—Matthew Green, Gresham House, 100; F. M. Taylor, 83, Gresham House, 5; J. B. Freemore, the Grove, Tottenham, 10; A. Murray, Tremby place, Charing Cross, 1; C. Lane, 9, Gresham House, 1; E. Beazley, 9D, New Broad-street, 1.

POPE AND PEARSON (Limited).—Capital 400,000*l.*, in 100*l.* shares. To take over the business and property of Messrs. Pope and Pearson, coal proprietors, and owners of the West Riding and Silkstone Collieries. The subscribers (who take one share each) are—J. B. Pope, West Riding Colliery, Yorkshire; G. Pearson, West Riding Colliery; G. Huntress, Doncaster; R. Pope, Clarendon House, Leeds; W. Easton, Leeds; J. Hopkinson, Normanton; J. Jones, Leeds.

MUNN AND COMPANY (Limited).—Capital 10,000*l.*, in 5*l.* shares. To acquire a brewery and malthouse in Lancashire. The subscribers are—J. Hargreaves, Newchurch, 40; T. Mitchell, Bolton, 40; J. Munn, jun., Newchurch, 40; G. H. Ormond, Lytham, 40; J. Watson, Horncliffe; G. C. Hardman, Rautenstall, 40; J. Mitchell, Fearn Hall, Newchurch, 1.

GLAN CLWYD MINING COMPANY (Limited).—Capital 12,000*l.*, in 1*l.* shares. For mining in the parish of Gwyddelwern, in the county of Merioneth. The subscribers are—W. H. Heap, Littleborough, 143; W. Sleaton, Seedley, Pendleton, 143; J. Robinson, Rochdale; T. Fletcher, Littleborough, 96; J. Watson, Littleborough, 71; J. Slater, Seedley, Pendleton, 143; J. Fletcher, Littleborough, 95; and W. Fletcher, Littleborough, 95.

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EUREKA LIQUID METER COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To acquire an invention for improvements in liquid meters, &c. The subscribers (who take one share each) are—Lord Graves, Thanckes, Devonport; W. H. Bennett, Crescent, Surbiton; J. H. Green, Weighton-road, Anerley; E. N. Arkman, 189, Euston-road; J. W. Clarke, Brill terrace, St. Pancras; E. J. Rowe, 120, Chancery-lane; and T. Greenacre, Turner-road, Bow.

GLOUCESTER STEAMSHIP COMPANY (Limited).—Capital 20,000*l.*, in 10*l.* shares. To carry on business as shipowners, &c. The subscribers are—Henry Allen, Hillfield, Gloucester, 50; E. N. Ellis, Gloucester, 55; T. H. Foster, Cheltenham, 25; T. H. Chance, Gloucester, 25; W. Nicks, Gloucester, 25; J. Reynolds, Gloucester, 25; J. Fellows, West Bromwich, 40.

ANGLO-INDIAN SPINNING AND MANUFACTURING COMPANY (Limited).—Capital 300,000*l.*, in 29,985 ordinary 10*l.* shares, and 150 founder's shares of 1*l.* To carry on business as cotton spinners and manufacturers in India and elsewhere. The subscribers are—J. Barton, Crofthouse, Accrington, 50; A. Hamilton, King-street, Manchester, 50; J. Swindells, Lees, near Manchester, 50; Eli Harrop, Lees, 50; S. Tweedale, Papmonds, near Rochdale, 50; W. Walmsley, 39, Booth-street, 50; J. Black, Moss Bank, Whalley Range, 50.

CITY OF LONDON FINANCE COMPANY (Limited).—Capital 25,000*l.*, in 1*l.* shares. To carry on a financial business, &c. The subscribers are—J. Westwood, Idol-lane, E.C., 10; G. White, King's-road, 10; J. T. Brompels, 20, Surrey-square, 10; W. S. Elliot, Harrow-place, Epping, 10; C. G. Cutler, Bennett's Hill, 10; H. T. Birbeck, Sussex-road, Holloway, 10; W. H. Birbeck, Sussex-road, 5.

THE GEOLOGY OF GENEVA.

An interesting contribution to the geology of Switzerland has recently been made by Prof. D. COLLADON, of Geneva, in a pamphlet giving a "Description of the Terrace of Alluvium upon which is built the Town of Geneva, showing the remarkable arrangement of the beds upon which the Upper Deposits repose." In it he explains that the town of Geneva has been originally built upon an almost triangular terrace, which extends to the Rhône, and is bounded on each side of the steep slopes abutting, on the one hand, upon the western extremity of the Lake of Geneva, and on the other on the plain of the River Arve, which flows into the Rhône about a kilometre below the Lake. This terrace, which is elevated about 30 to 32 metres above the level of the Lake, is continued and stretched out towards the south-east, and forms the plateau of the Tranchées, and then the two plains of Contamine and Champel. Large and deep excavations recently made on the plateau of the Tranchées and the plain of Contamine, have enabled the author to observe at several points the general arrangement of the beds of alluvium that compose the subsoil of the terrace, and the remarkable character of the arrangement appears to him to merit the attention of geologists and of all who take an interest in the study of the ancient changes of the basin of the Lake of Geneva.

Under the vegetable soil, which is of variable depth, there occurs a bed of almost uniform thickness, and entirely composed of horizontal layers of gravels and pebbles, with some traces of thin layers of sand, which are also arranged horizontally. The bottom of this deposit is a horizontal plane, perfectly distinct, and this Professor Colladon has found, by surveying, to be situated at 390 metres below the floor of the observatory—that is to say, at 28·342 metres above the mean level of the lake. Immediately below this horizontal bed, and against the plane mentioned, there is seen, abruptly stopped and without any transition or inflection, a multitude of sandy beds, very much inclined, deposited with much regularity, and presenting an astonishing number of perfectly distinct layers, generally parallel to each other, and which in the beds consisting of fine sand have somewhat the appearance of piles of cardboard looked at edgewise. These sandy beds are alternated with beds of fine gravel, having the same dip, but less regular and less striated, and sometimes show traces of slipping to a small extent. The angle of inclination is generally over 30° for all the visible beds, the line of greatest dip forming with the horizontal plane an angle between 30° and 40°, and sometimes reaching as much as 45°. The most remarkable fact is the absence of any indication of transition where the inclined strata change abruptly to the horizontal bed.

Prof. Colladon has examined at various points, and finds that the slope of the beds is always towards the Lake, with the exception of some very slight accidental deviations, probably due to partial slipping or settling. In depth the Professor has not been able to follow the inclined beds more than about 14 metres below the horizontal plane, but he considers it may be assumed they are cut off at a level above that of the Lake, and that they there abut upon an extended bed of glacial clay which plunges under the Rhône at the extremity of the Lake. This bed of clay, which is of considerable thickness, has a gradual gradient from the south-eastern side, and crops out at from 1 to 2 kilometres from the town. It should be observed with regard to the physical composition of all the beds, both horizontal and inclined, that they bear a remarkable analogy, as to the nature of the materials of which they are composed, to the pebbels, gravels, and sands which the Avre has deposited upon its banks. Their elements, in great part silicious, are composed essentially of the rolled debris of the primitive rocks; the sands, moreover of the Tranchées are much sought by builders for making mortar, and are considered equal to the Avre sands.

Prof. Colladon's paper is accompanied by valuable diagrams, that render the explanations given particularly clear and intelligible. The paper is altogether a very valuable one.

MOULDING AND COMPRESSING.—Mr. B. D. HEALY, of Swansea, has patented some improvements in machinery for moulding and compressing patent fuel, iron ore, and bricks. An horizontal cylinder, containing four pairs of moulds, is mounted at one end of a strong framing, and a main shaft, with a crank in the centre, is mounted at the other end. Two moulds are fed and two others are pressed simultaneously by means of rods and levers, which are worked by the crank. An intermittent motion is given to the cylinder, which causes it to revolve 90° for each revolution of the main shaft, the motion being communicated by a rocking lever, which passes through the feeding-plunger behind the cylinder. There is an arrangement of liners in the bearings for adjusting the thickness of the bricks or blocks, and a stop-bar is fixed midway between the faces of the duplex-presses, which ensures the presser-faces entering the moulds fairly. The main shaft is driven from a second shaft by means of spur-wheels, all the gearing being within the main framing, but suitable driving pulleys and fly-wheels are fixed to a second shaft outside the framing, except when a direct-acting engine is applied to the second shaft, in which case only the fly-wheels are fixed outside.

THE

Steam-Ship and Factory Shaft-Coupling Company

(LIMITED).

Incorporated under the Companies Acts, 1862 and 1867, whereby the liability of shareholders is limited to the amount of their shares.

CAPITAL £150,000, IN 30,000 SHARES OF £5 EACH.

Payable as follows:—

£1 on application, £1 10s. on allotment, and the balance as required at intervals of not less than three months.

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29, GRESHAM STREET, BANK, LONDON; and 133, WEST GEORGE STREET, GLASGOW.

PROSPECTUS.

This company has been formed to supply an urgent want which has long been felt by the shipping and manufacturing interests—namely, the repair of broken shafts at sea and in factories.

The "Engineer," of 20th December, 1872, observes:—"It is not a little remarkable that, notwithstanding all the ingenuity expended on the marine engine, no one has thought of devising some method of patching up a broken screw shaft at sea."

The invention consists of a coupling, which can be easily and expeditiously applied to fractured shafts, and which renders them as strong as they originally were.

That such an invention was much required and will be largely taken advantage of cannot be doubted, for, on reference to Appendix No. 2, it will be seen that a large percentage of vessels become disabled, and many of them total wrecks, through the breakage of screw shafts and paddle shafts, thus causing serious loss, both of life and property.

After the machinery of a steam vessel has broken down, it is well known that the charges for towage, &c., are enormous, in addition to which great losses are caused by the delay which takes places in consequence, and it is, therefore, of the utmost importance that every shipowner should provide himself with the means of enabling his vessels, in case of accident to their shafts, to resume their course without delay.

According to the returns of the Bureau Veritas (Appendix No. 3), 244 steamers of over 100 tons net register were totally lost during the year 1872; and of these unquestionably a large percentage were disabled by broken shafts.

The "Glasgow Weekly Mail," of 28th March, 1874, has the following upon this subject:—Why Steam Ships are Lost.—Among the numbers of first-class steam ships that have disappeared without leaving any record of their fate, I have little doubt that their loss is mainly attributable to their machinery becoming disabled, and the ships unmanageable and getting into the trough of the sea, and from their great length and difficulty of manœuvre, unable to get out; and from their rolling, and too often from the shifting of bulk cargo, the vessel cannot right itself, and down she goes without leaving a trace behind.—'Times' Correspondent."

The number of merchant steamers afloat in 1872 (vide Appendix No. 4) was no less than 4335. Of these, 2538 belonged to Great Britain, and averaged 850 tons each. The number of steamers built in Great Britain in 1873 amounted to 460, averaging 1167 tons each; the average dimensions increasing every year (vide Appendix No. 3) 4335 steamers in 1872, plus 460 built in 1873, gives a total of 4795 steamers in 1873, and of about 5250 in 1874.

In factories great numbers of hands are often thrown out employment for a long time by the breakage of main driving shafts, and the loss inflicted upon owners and men by the stoppage of a mill in consequence is very severe. By employing one of this company's couplings a fractured shaft can be restored to work almost immediately.

It is proposed to make immediate arrangements for the manufacture of the company's coupling, and the result of careful estimates of the cost of manufacturing them, and the price for which they can readily be sold (assuming that only 10 per cent. of the vessels afloat adopt them), is that the annual profits will yield a handsome percentage to the shareholders on the nominal capital.

In the estimate above referred to no account has been taken of the number of couplings which it is believed will be required in factories, mines, pumping works, and other undertakings, when once the company is in a position to supply the demand.

An eminent naval authority, Sir James Anderson, formerly commander of the steam ship Great Eastern, has written a letter (Appendix No. 5) approving of the invention. "The plan," he observes, "is so simple and inexpensive that I should expect most steam ship owners will be willing to put them on board each steamer as a valuable alternative in case of accident to the screw shaft."

No promotion money beyond the cost of advertising and registration will be paid by the company.

By agreements dated the 30th day of May, 1874, and the 7th of October, 1874, respectively entered into between H. Aguilar, on behalf the company, of the one part, and Cromwell Fleetwood Varley, on behalf of the company, of the other part, the company have secured this valuable patent for the sum of £15,000 in cash, and £35,000 in fully paid-up shares of the company.

Application for shares must be made, accompanied by the deposit of £1 per share to the secretary or bankers of the company. When a less number of shares is allotted than that applied for, the balance of the deposit will be applied in payment of the sum payable on allotment, and where no allotment is made the deposit will be returned in full.

Prospectuses and Forms of Application for Shares can be obtained from the brokers and solicitors, and at the temporary offices of the company, and a model of the coupling can be seen at any time at the offices of the engineer, 2, Great Winchester-street Buildings, where the fullest explanation will be given.

The well-known patent agents, Messrs. Carpmael and Co., have reported upon the validity of the patent and upon the value of the invention. The following is an extract from their opinion:—

"I have also caused to be examined the specifications of all prior patents of which the titles refer to the coupling of shafts. Nothing has been found to effect the validity of the above-mentioned patent, nor indeed anything relating expressly to apparatus for coupling broken propeller shafts.

In my opinion the patent is good and valid, and the invention appears to me to be valuable and well calculated to attain the object for which it is designed."

24, Southampton Buildings, May 23, 1874. WILLIAM CARPMAEL.

The successful application of the coupling demonstrating clearly its practical value has been several times shown on board the steamer Era, which is still running with her shaft secured by the patent coupling. Opinions of the Press, and a list of casualties to steamers from broken shafts, may be had at the offices of the company.

APPENDIX.

No. 1.

"The Syria, from the Cape of Good Hope, is at Ascension with broken shaft. Her mails and passengers have been transferred to the Northam. She left St. Vincent, C.V., Feb. 13, and was towed into Southampton; when 16 miles off Portland she was found by the Arracan, carrying away all her boats, and staving in some of her iron plates. The Arracan sank shortly afterwards."—Glasgow Herald, Feb. 17; Liverpool Mercury, March 7; North British Daily Mail, March 10, 1874.

"ADEN, May 4.—The Powan (s.) ferries from the Clyde for Hong Kong; arrived this morning in tow of a Messagories steamer; agreement £9000; total expenses about £3000."—Glasgow Herald, May, 1873.

"MALTA, March 9, 1874.—The Kate (s.), Capt. Jefferson, from Odessa, has been towed in 240 miles * * * by the Hugh Miller (s.); towage agreement £2000."—Glasgow News, March 20, 1874.

No. 2.

"Nov. 22.—The Kinsale, when running into Waterford Harbour, broke her screw shaft; she ultimately became a complete wreck; Capt. Anderson and 25 others were lost in consequence."—Engineer, Dec. 20, 1872.

"Nov. 29.—The City of Bristol, when 300 miles from Sandy Hook, broke her screw shaft, and had to be taken back to New York."—Engineer, Dec. 20, 1872.

"DUNGENESS, Oct. 13.—The KSVH [Buzzard] (s.), of Cork, from Clyde to Antwerp, passed east to-day, but has since put back to the roads with shaft broken, and is waiting for assistance.—Greenock Telegraph.

"The Citizen (s.), of Waterford, has passed up the channel under sail, having broken her shaft."—Glasgow News, Oct. 14, 1873.

"LISBON, Feb. 8.—The Lebanon (s.), from Cardiff to Barcelona, has been towed in here with shaft broken."—Glasgow Herald, Feb. 10, 1873.

"The Patagonsa (s.), which left Valparaiso for Liverpool on Aug. 26, had arrived at And with her main shaft broken; she was to be towed back to Callao.—Glasgow News, August, 1873.

"The Colina (s.), from New York to San Francisco, has put into Rio Janeiro with shaft broken."—Glasgow News, Nov. 1873.

"The Baltic, which arrived at Granton yesterday from Gothenburg, reports having met a Danish steamer about eight miles off the Scaw disabled; shaft broken."—Glasgow News, Dec. 11, 1873.

"The Norden, from Marseilles to Bona, in ballast, put into Carloforte on 12th December with shaft broken; she will be towed back to Marseilles."—Glasgow News, December, 1873.

"The Life Brigade (s.) was towed to dock at Queenstown to repair main shaft, it having been broken."—Glasgow News, Dec. 22, 1873.

"The Emerald Isle has been towed into Liverpool with main shaft broken."—Standard, Feb. 18, 1874.

"The Pascal (s.), of Liverpool, from the River Plate to Antwerp, broke her main shaft 50 miles from Madeira. The Ethiopia left Madeira on Feb. 2 in search of her, and to tow her to Funchal (agreement, £500 if successful)."—Glasgow News, Feb. 7, 1874.

"The City of Rio Janeiro (s.), which left Liverpool on the 16th of April, was towed into Rio Janeiro, with shaft broken, by the Newton (s.)."—Glasgow Herald, May, 1873.

"LISBON, March 1.—The Mile (s.), from Hull, with shaft broken, was seen in 18 N. 24 W. steering for St. Vincent, C.V., by the Tiber (s.), from the Brazils."

"The German mail steamer Westphalia, which has been several days overdue from New York, was towed into Queenstown harbour to-day by the Spanish steamer Ponce. On the 24th, ten days after leaving New York, the main shaft of the Westphalia broke in two. The vessel was put under sail, and two days later fell in with the Ponce. The mails were landed at Queenstown. Passengers are going forward to Plymouth on the steamer."—Daily News, Aug., 1874.

"The North-Eastern (s.), Capt. Nicholson, from Newcastle, broke her shaft near Rhodes, and was towed into Syra by the Seafield (English s.), on 11th Sept."—Globe, Sept. 12, 1874.

"The Danube (s.), which left Liverpool this morning (Sept. 23) for Genoa, has put back with main shaft broken."—Daily Telegraph, Sept. 24, 1874.

"The Brittany (s.), from Havre to Cardiff, in ballast, was towed into Falmouth on Sept. 24, with mainshaft broken, by the Greenwood (s.), from Southampton to Cardiff; she was taken in tow from off the Eddystone."—Daily News, Sept. 24, 1874.

"MALTA, March 9.—The Kate (s.), Capt. Jefferson, from Odessa, has been towed in 240 miles, short of coal, by the Hugh Taylor (s.) [towage agreement £2000]."—Glasgow News, March 20, 1874.

"The Black Swan (s.), Capt. Scarth, from Huelva to Newcastle, has been towed into Plymouth, with mainshaft broken, by the Calliope (s.), Capt. Ockenden, from Alexandria."—Glasgow News, March 21, 1874.

"The Antenor (s.), from Shanghai to London, has put into Colombo, with shaft broken."—Glasgow News, March 24, 1874.

"The Merrimac (s.), Captain Weir, has put into Para, with shaft broken."—Glasgow News, March 31, 1874.

"The Covenantee, arrived at Liverpool from Santos, reports having spoken on 16th April, in latitude 49 N., long. 15 W., the Teutonia (Hamburg steamer), with mainshaft broken, and steering E.N.E. under sail."—Glasgow News, April 22, 1874.

"The Teutonia (s.), of Hamburg, for Southampton, has arrived off the Lizard, with shaft broken, in tow of a steam-tug."—Glasgow News, April 25, 1874.

"ACCIDENT TO A STEAMER.—The Amphion (s.), plying between Ardrossan and Newry, had the shaft of her engine broken while off Ailsa Craig on Monday. She was brought into Ardrossan by the tug steamer the same evening, where she will be repaired."—Glasgow News, May 6, 1874.

"STEAMSHIP ETHIOPIA.—A telegram from a passenger on board the steamship Ethiopia states that the shaft of the vessel broke on April 22, 1000 miles from Glasgow, but that the chief engineer managed to splice it, and to work the engines under slow steam. A number of the passengers were transferred to the steamship Pensaylvania, for New York, others to the steamship Eclavi, for Montreal, and the remainder proceeded by next steamer from Glasgow. It is added that the weather was good, the food abundant, and the health of the passengers excellent."—Daily Telegraph, May 15, 1874.

"The Squirrel (s.) has been towed into Portreath by the Blanche (s.), with mainshaft disabled."—Glasgow News, May 18, 1874.

"LISBON, June 22.—The Kroniloff (s.), from London to Odessa, has been towed in here with shaft broken."—Glasgow Weekly Herald, June 27, 1874.

"The Fifeshire (s.), of Kirkcaldy, has been towed into Hull, with centre shaft broken."—Glasgow News, July 13, 1874.

"Egyptian (s.), Liverpool to Palermo, was towed into Lisbon, with mainshaft broken."—Standard, July 15, 1874.

"WHITEHAVEN, Sept. 10.—The Palermo (s.), Hayes, hence to Clyde, put back on the 8th, with shaft broken."—Greenock Telegraph, Sept. 14, 1874.

"The Armagh (Barrow steamer), arrived at Belfast May 26, reports that off the North Mull of Galloway Head fell in with the Swan (s.), from Glasgow to Liverpool, in ballast, with mainshaft broken, and towed her into Bangor Bay, Belfast Lough."—Glasgow News, May 27, 1874.

"LIVERPOOL, May 28.—The Swan (s.), from Glasgow, which was towed into Belfast Lough, 26th May, with main shaft broken, has been towed here."—Greenock Telegraph, May 30, 1874.

"Wakefield (s.), from Hamburg, has been assisted into Grimsby by the Halifax steamer, with shaft broken."—Daily News, Oct. 3, 1874.

The few instances of broken shafts quoted above are ample to show the great want which is experienced of an expeditious means of mending broken shafts at sea.

No. 3.

The following is extracted from the list of maritime disasters published by the Bureau Veritas at Brussels, for the year 1872:—

"Coasting and foreign trading steamers over 100 tons net register totally lost during 1872, 244—viz., 142 English, 56 American, 11 Spanish, 8 German, 6 French, 4 Brazilian, 3 Dutch, 3 Norwegian, 2 Russian, 2 Belgian, 2 Swedish, 1 Portugese, 1 Peruvian, 1 Uruguay, 1 Republica Argentine, 1 Guatemala; 23 steamers have been reported missing during the year, and are included in the above total. During the same year 41 steamers of over 100 tons burden were disabled by broken shafts, and 12 by damage to rudder."

No. 4.

MERCHANT STEAMERS.—According to the Bureau of Statistics at Brussels, the steam merchant marine of the world consisted in 1872 of 4335 steamers, measuring 3,680,700 tons. Of these Great Britain has 2538, aggregating 2,382,145 tons, and the United States 420, of 282,150 tons."—From the "Scientific American," June 14, 1873.

No. 5.

Letter from Sir James Anderson, formerly Commander of the ss. Great Eastern.

"66, Old Broad-street, London, E.C., May 2, 1874.

My Dear Varley,—I have examined the coupling which you are introducing for securing screw shafts which are inclined to break, or for splicing shafts which have already broken. The plan is so simple and inexpensive that I should expect most steamship owners will be willing to put them on board each steamer as a valuable alternative in case of accidents to the screw shafts.—Yours very truly,

(Signed) JAMES ANDERSON.

THE STEAMSHIP AND FACTORY SHAFT COUPLING COMPANY (LIMITED).

FORM OF APPLICATION.

(To be retained by the Bankers.)

To the Directors of the Steamship and Factory Shaft Coupling Company (Limited).

GENTLEMEN,—Having paid to your credit at your bankers the sum of £ , being £1 per share on my application for shares, of £5 each, of the Steamship and Factory Shaft Coupling Company (Limited), I request you to allot me that or any less number of the said shares, and I hereby agree to accept the same, and to pay the balance in respect of such shares in terms of the prospectus.

Name (in full) .....
Address .....
Profession (if any) .....
Date .....1874 Signature .....

I desire to pay up in full upon allotment the amount payable in respect of such shares.

Signature .....

Original Correspondence.

THE SIMPLON TUNNEL, AND THE COMMERCIAL INTERESTS OF FRANCE—No. II.

Comparing the amount of engine-power required for the removal of a ton of merchandise from Iselle to Brigue by the long tunnel proposed by Mr. Vauthier and that which would be necessary with the high level line, with 40 millimetre gradients, suggested by Mr. Mondesir, and without taking into consideration the brake power used during the descent, it is found that the low level line will require eighteen times less than the high level line, and that assuming a speed of only 30 kilometres (under 20 miles) per hour, the journey could be made in 36 minutes by the low-level line, it would occupy by the high level line (the speed upon which could not exceed 12 kilometres per hour) 5 hours 25 minutes, or nine times as long. Compared with a middle level tunnel the difference would, of course, be less striking, but the difficulties of reaching even the latter would be so considerable as to give it but little advantage over the high level tunnel. As to the time the long tunnel will take to construct Mr. Vauthier, to be on the safe side, assumes that the whole tunnel will be made from the two ends, and that only 1700 metres per annum will be driven (at St. Gothard in the 32 months ending on June, 1871, the average rate was 1706 metres per annum, and since that time the speed has much increased), so that 11 years will be occupied upon the tunnel, leaving 3 years for the preliminary and finishing operations. According to the most reliable survey of Mr. Gerlach, the tunnel from Brigue to Iselle will have to pass through 10,600 metres of gneiss; 4400 metres of amphibolic schists, less crystalline and mica schists, with garnets; 2200 metres of calcarious schists, and grey schists of the jurassic formation; 800 metres of slatey schist; and, lastly, to the north 400 metres, including with some beds of gypsum, some thin seams of marble, and limestone—making 18,400 metres in all. The direction of the beds to be intersected is north-east and south-west—that is to say, almost normal to that of the tunnel. With the exception of the gypsum at the northern extremity, which has rather a southerly direction, all the others are northerly, the dip varying from 30° to 70°. The filtration of water is little to be feared, unless in the gypsum beds, at the northern extremity. All the sedimentary or crystalline rocks are compact, and but little split, and the beds of limestone found on the southern side are too unimportant and too compact to cause fear of filtration. It will be recollected that at Mont Cenis in the central part the fissures were found to be so fully filled with calc-spar that, from being permeable, the rock became quite dry, so that water had to be taken into the tunnel, even to wet the drills. Indeed, at the Simplon there appears to be in every respect the utmost facility for tunnelling, and it seems unlikely that either excessively hard rock or any special difficulties will be met with. In all parts the rock formations are cut perpendicular to their direction; and Mr. Gerlach goes so far as to think that in the crystalline rocks all lining will be unnecessary, and that even in the jurassic schists it will be necessary only in traversing the gypsum beds. According to Mr. Stockalper, whose experience at Mont Cenis and St. Gothard attaches considerable importance to his opinion, the gneiss of the Simplon is more like mica schist than granite, and that the tunnelling will be relatively easy. This gneiss is in the vicinity of Iselle worked as building stone, and where it crops out at the gorge of Gondo, on the Italian side, it is a hard rock, more or less schistose, but lively and homogeneous, offering but moderate difficulty for boring operations.

And it seems that the low level line is not only the most desirable, but would be absolutely the least costly; so that even with only equal traffic (though it can scarcely be doubted that the low level line would command at least 50 per cent. more traffic than the high level line) far larger dividends would be secured to the capitalists embarking in the enterprise. From Messrs. Lehaitre and Mondesir's detailed estimate for the high level line it will be found that the line to connect Brigue and Domo would be 81 kilometres, with a high level tunnel 4683 metres long, at an altitude of 1680 metres at the north end, 1700 metres at the south end, and 1732 metres at the highest point (speaking roughly, the tunnel would run at an elevation of a little over a mile in perpendicular height above the neighbouring plains), whilst the 40 millimetre (1 in 25) gradients would be necessary upon 63 per cent. of the entire line. The minimum radius of the curves is 200 metres, and there would be six reversing shunts (double rebroussements)—that is to say, stopping places at the bottom of one incline and top of another, where the engine would have to be changed to the other end of the train to continue the journey. With this arrangement, and only providing for a single way, and for the completion of the line in five years, it is estimated that the cost would be 66,000,000 frs., or about 816,500 frs. per kilometre. It cannot be doubted that this is a very low estimate, considering that there would be 99 tunnels, of the aggregate length of 23 kilometres, which are put down at 1100 frs. per metre, which is very little; and that the covering of the portions of the line which have to be protected from snow is put down at 7,000,000 frs. Taking these amounts from the total of 44,838,731 frs. put down for infrastructure there remains less than 12,000,000 frs. for the 58 kilometres, or 207,000 frs. per kilometre, which appears very low for a region so rugged as that to be dealt with, and where we find not only 99 tunnels but 27 bridges from 5 to 30 metres long, and 12 viaducts of over 30 metres. However, the estimate, although so low as to be very doubtful, may for the present be accepted, but as it is now acknowledged that the traffic between Brigue and Domo would require a double line two-fifths would have to be added, making 92,400,000 frs. for the high level line, with a double way.

Turning to the low level line, proposed by Mr. Vauthier, we find that the total length of line to connect Brigue with Domo is 38 kilometres (instead of 81 kilometres); that there are no reversing shunts; that 18,400 metres forms the long tunnel, and the remaining 19,600 metres is the short section of 2 kilometres, with a gradient of 20 millimetres (1 in 50) to reach the northern mouth of the tunnel and the section (on which there is no heavier gradient) from Iselle to Domo. Including all the losses and waste at Mont Cenis, arising from experimental trials, mistakes made through absence of precedents, &c., was only 2900 frs. for the running metre, or 70 frs. the cubic metre; but as Mr. Vauthier assumes that the extra length of his tunnel would involve some little extra first outlay for plant, he makes no deduction, and takes 2900 frs. per running metre as the basis of his calculation; this gives 53,360,000 frs. for the 18,400 metres. To this he adds 4,000,000 frs. for machine-shops, &c., 1,840,000 frs. for the double way, 1,800,000 frs. for management during the 12 years, and 2,400,000 frs., for contingencies, making 63,400,000 frs. in all for the tunnel, or 3500 frs. per running metre. In this Mr. Vauthier is probably 500 frs. per metre too high at least, so that there is no fear of its being exceeded. In the same way his estimate of 1,000,000 frs. per kilometre for the 19,600 metres forming the other part of the line, making 19,600,000 frs. in all, seems also too high (indeed, Mr. Vauthier reminds us that the Val-de-Travers Franco-Swiss line, which has similar gradients and difficulties, cost but 380,000 frs. for the single or 430,000 frs. per kilometre for the double line; and that the section from Murat to Vic-sur-Cerre, on the Orleans line, cost but 450,000 frs. per kilometre, although the gradients there are 30 millimetres); yet, taking all his figures, the total capital required would be but 83,000,000 frs., or 3,300,000*l.*, which is absolutely 1,000,000 frs. lower than the estimate for the middle level tunnel of Mr. Jaquemin, which from a commercial point of view has really but little more to recommend it than the high level tunnel of Mr. Mondesir. For the high level line at the Simplon the total capital required, if no subvention were granted, would be 102,113,000 frs., of which 9,713,000 frs. would be required for interest, or with a subvention 49,068,000 frs., of which 4,668,000 frs. would be required for interest; in the latter case interest would only have to be paid upon the net capital of 44,400,000 frs. For the low level line the total capital required, without subvention, would be 104,184,000 frs., of which 21,184,000 frs. would be required for interest; or with a subvention 40,517,000 frs., of which 5,517,000 frs. would be required for interest. The interest in the latter case will be required only

on the necessary net capital of 35,000,000 frs.,, of which sum only 15,400,000 frs. will be required for the tunnel, and the remainder for the open portions of the line. It is, therefore, only upon the supposition of a line being made without a subvention that any, even theoretical, advantage whatever will be shown for either of the other routes as compared with the low level line, and with the subvention of 48,000,000 frs., which has been named as necessary, there would be a balance of more than 8,000,000 frs. in favour of Mr. Vauthier's low level line. The low level line appears to have everything to recommend it, and with the improved machinery and appliances now, at disposal there would be no difficulty in showing that it is likely to prove highly remunerative in a commercial sense. Mr. Vauthier is certainly deserving of complete success.

TECHNICAL EDUCATION IN IRELAND.

ROYAL COLLEGE OF SCIENCE, STEPHEN'S GREEN, DUBLIN.

The Royal College of Science was established by the Science and Art Department in 1867, and holds a position in Dublin similar to that of the School of Mines in London. The professional staff of the Royal Dublin Society and that of the Museum of Irish Industry were combined, new chairs were founded, and the Royal College of Science, with a complete staff of professors, a museum, and library, was opened for the reception of students. The instruction given at the College of Science during the three years course has special bearings on the industrial arts, classed broadly under the heads of mining, agriculture, engineering, and manufactures. The student of the industrial arts is thus able to obtain a complete course of instruction in any of the special branches above enumerated at a small cost, and without leaving his own country. Besides these evident advantages, exhibitions and scholarships are awarded yearly to the best students. There is another advantage, which ought to be widely known and appreciated—namely, that students who can obtain subscriptions of 25*l.* per year from their own neighbourhood can obtain from the Science and Art Department an additional 25*l.* and free education at the Royal College of Science as local exhibitioners.

There are four Royal Scholarships and nine Royal Exhibitions attached to the College. The Royal Scholarships, which are of 50*l.* yearly value each, with free education, are tenable for two years. Two become vacant each year, and they are awarded to students who have been a year in the College. The nine Royal Exhibitions of 50*l.* yearly each, are tenable for three years, with free education. The holders of these must pass the examination required for the Associateship of the College. Three of the Royal Exhibitions are open for competition annually at the May examination of the Science and Art department. Medals and other prizes are also awarded to students for the best answering in each subject at the examinations held in June.

The course of instruction extends over three years. During the first and second year the instruction is general, the student devoting his time to the study of the sciences bearing upon the industrial arts. In the third year the study is specialised, and the attention of the student is concentrated on one of the four subjects—mining, agriculture, engineering, or manufactures. The College is also intended to aid in the instruction of teachers for the local schools of science. On the completion of the third year the student may obtain the diploma of Associate of the Royal College of Science. It is not necessary that the student should attend the complete course, and take the diploma, but any of the classes may be taken separately by those who only want instruction in some special subject. There are nine chairs in the College—Chemistry, held by Professor R. Galloway, F.C.S. Applied Mathematics, Prof. H. Henessey, F.R.S. Descriptive Geometry and Engineering, Prof. T. F. Pigot, M.R.I.A. Physics, Prof. W. F. Barrett, F.R.S.E., F.C.S., M.R.I.A. Geology, Prof. E. Hull, M.A., F.R.S. Mining and Mineralogy, Prof. J. P. O'Reilly, M.R.I.A. Botany, Prof. W. R. M'Nab, M.D. Agriculture, Prof. E. W. Davy, A.M., M.D., M.R.I.A. Palæontological Demonstrations are given by the Demonstrator, Mr. W. H. Baily, F.L.S., F.G.S., M.R.I.A. The Assistant Chemist is Mr. Wm. Plunkett, F.C.S. The duties of the Secretary are ably discharged by Dr. F. J. Sidney, M.R.I.A.; and Mr. Alphonse Gages, M.R.I.A., is the Librarian and Curator of the Museum.

During the first year instruction is given in applied mathematics, physics, botany, descriptive geometry, and geometrical drawing. The Professor of mathematics also gives such further instruction as may be necessary. During the second year the course includes applied mathematics, chemistry, theoretical and practical zoology, and mechanical drawing. In the first and second year students entering for the Associateship are required to attend all the courses on the subjects appointed for these years. In the third year they are required to attend all those belonging to any one division. Thus, those selecting the MINING division must attend the classes of geology and palæontology, mining and minerals, metallurgy and assaying, mechanism and land surveying. Those studying AGRICULTURE, the classes of geology and palæontology, agricultural science, land surveying, mechanism and machinery, and analysis of soils and manures. Those joining the ENGINEERING division, the classes of mechanism and machinery, mechanical drawing, engineering and surveying, geology and palæontology. And those selecting the division of MANUFACTURES must attend the classes of applied mechanics and physics, applied chemistry, and technical analysis.

The Chemical and Metallurgical Laboraties are open daily under the direction of Prof. Galloway, and a Physical Laboratory, under Prof. Barrett, will soon be open for the use of students. The Museum is chiefly used to supply specimens for the illustration of the lectures, but is open to the public daily. The Library, which is extensive, contains not only carefully selected works relating to the subjects on which instruction is given, but also all the English and foreign scientific periodicals, and the Transactions of learned societies. It is open to the students, and also to the public, under certain restrictions. In addition to the ordinary lectures, short courses of evening lectures of a more popular character are delivered at a nominal charge. The fee for the whole course of lectures during the three years is 25*l.*, exclusive of the laboratory, for which an additional fee is paid of 6*l.* in the second year and 4*l.* in the third year. For non-associate students the laboratory fee is 12*l.* a year. Free admission to the lectures at the Royal College of Science is granted to any person who takes a gold medal in the May examination of the science and art department.

To give a general idea of the scope and objects of the instruction to be obtained at the Royal College of Science reference may be made to the syllabus published by each Professor, and given in full in the Directory of the College for the session 1874-5, which has recently been issued. Firstly, with regard to APPLIED MATHEMATICS AND MECHANISM. Students entering the College must show that they possess a sufficient knowledge of pure mathematics, if not then they attend pure mathematics for two years, as an auxiliary to the proper course. During the first year they study the elements of plane and solid geometry and algebra, the elements of plane and spherical trigonometry and mensuration. In the second year geometrical conic sections, and co-ordinate geometry of two or three dimensions, also the differential and integral calculus. The course of applied mathematics and mechanism extends over three years, and is divided into four different parts. All associate students are required to attend the first three parts; the engineering students are required to attend the fourth.

The object of the first year's course, in elementary mechanics, is to convey to the beginner accurate and clear ideas upon the elements of mechanics, and is, as far as possible, experimental. The general scope of the purely experimental portions of the course may be ascertained by inspection of "Ball's Lectures upon Experimental Mechanics" (London, Macmillan, 1871); the metric system is, however, now used instead of the British system employed in that volume. The theoretical portion is similar to that in Goodwin's "Elementary Statics and Dynamics," except that trigonometry is not introduced. Quantitative experiments are introduced whenever practicable. For proper record of the results the students are supplied with appropriate forms, and the discussion of the experiments is conducted by projections upon "papier millimetrique." A considerable portion of the course is devoted to the theory of machines. These are illustrated, as far as possible, by actual use of the machines themselves. The principle of work is explained to be the keystone of the subject. Great attention is paid to the force of friction. In the first place the laws are investigated experimentally. The effect of friction as causing loss of energy in machines is examined both by theory and experiment. Various machines in which friction is useful are exhibited and discussed.

The strength of materials is also studied. By suitable apparatus the most important laws which connect the flexure and ultimate strength of a beam with its dimensions can be exactly verified by experiment. The leading principles in the construction of frames, trusses, girders, and arches are also well adapted for experimental illustration. In a few lectures the elements of kinematics are considered, under the heads—Velocity, Linear Velocity, Angular Velocity, Composition of Velocities, Accelerated Velocity. The movement of a falling body is studied, partially by direct experiment and partially in a modified form by Atwood's machine. Particular attention is paid to the theory of the pendulum, and a series of experiments are made for the determination of the force of gravity at Dublin. The general character of the courses of practical mechanics and of mechanism and steam-engines are such as to give the students a thorough insight into the subjects. The fourth course—that of Applied Mechanics—is only for engineering students. The text-book used is Rankine's "Applied Mechanics." A workshop is attached to the institution, in which students are permitted to use the lathes and other tools.

In the department of DESCRIPTIVE GEOMETRY, MECHANICAL DRAWING, ENGINEERING, AND SURVEYING, descriptive geometry and geometrical drawing are taken during the first year; mechanical and machine drawing during the second; while the third year is devoted to mechanical and engineering drawing, engineering, and surveying. In the engineering part of the course lectures are delivered on building materials, foundations, rivers and canals, supply of water to towns, bridges and roofs, roads and railways.

EXPERIMENTAL PHYSICS.—A course of 90 lectures is also embraced in the first year's study. Three lectures are given each week, accompanied by experimental demonstrations. It is further proposed to add a practical course as soon as the new laboratory is completed. From the syllabus of the course on Physics, drawn up by Prof. Barrett, we make the following epitome. The course commences with an historical sketch of the development of experimental science, and the method, aim, and scope of experimental enquiry. The student is then briefly made acquainted with the various manifestations of energy. The law of the conservation of energy; the transmutation of energy; the estimation of energy by work done; and the degradation and dissipation of energy. The physical properties of solids, liquids, and gases are then discussed. Sound, Light, and Heat are next dealt with in an extended series of lectures. Electricity and Magnetism follow these subjects, and the practical application and measurements of electric currents are treated at length. A short course on Meteorology concludes this branch of study.

The course of CHEMISTRY includes lectures on general and applied chemistry, as well as the laboratory course of practical chemistry. In applied chemistry lectures are delivered on the manufacture of the chief chemical substances used in the arts and manufactures, as hydrochloric acid, sulphuric acid, phosphorus, ammonia, potash salts, and common salt. The various metallurgical processes are also described and explained:—Smelting and manufacture of iron, wrought-iron, cast-iron, and steel; copper smelting; effect of impurities upon the quality of copper; properties of copper; extraction of zinc from its ores; alloys of copper and zinc used in the arts; lead smelting; extraction of silver from lead; uses of lead; manufacture of white lead; Extraction of tin, antimony, and bismuth from their ores; the uses of these metals; extraction of nickel from its ores; manufacture of German silver; treatment of cobalt ores, and the manufacture of cobalt colours; extraction and purification of mercury; methods of extracting silver from its ores; treatment of gold ores, and alloys of gold and silver. The laboratory instruction in practical chemistry includes qualitative analysis, quantitative analysis, assaying and volumetric analysis, and organic analysis. In quantitative analysis the special part of the course embraces for—mining students, the examination of fuels, clays, cements, ores, metallurgical products, &c.; for agricultural students, the analysis of manures, soils, water, milk, cereals, and other foods; and for students in the manufactures, a complete course of volumetric analysis and commercial testing.

With regard to the remaining departments, it may be mentioned that for BOTANY lectures are delivered on the general and speeial morphology and physiology of plants. Practical instruction is also given in vegetable histology and anatomy. Demonstrations are given weekly on fresh plants from the Botanic Garden, Glasnevin, and excursions in practical field work are held during the latter part of the session. The course of ZOOLOGY includes lectures on the general physiology and morphology of animals, and the principles of classification. In the lectures on Systematic Zoology attention is paid to all the groups, from the lowest to the highest, and to the extinct forms, as well as to those now living at the present day. The GEOLOGICAL course of 50 lectures is under Prof. Hull, the director of the Geological Survey of Ireland. After an introductory statement of evidences of internal high temperature and discussion of volcanic phenomena, the course embraces an account of the rock-forming minerals, a course on petrology, a detailed description of the geological formations from the earliest to the most recent, and terminates with physical geography. The course is afterwards supplemented by 25 demonstrations on palæontology, by Mr. Baily, F.G.S.

In the department of MINERALOGY AND MINING lectures are given on Crystallography, Crystallophysics, Crystallogeny, or the methods by which crystals are formed, and on the Classification of Minerals. In mining the course of instruction includes explanatory works; preliminary examination of a mineral deposit, markets and means of conveyance, coal fields, mining operations properly so called, surface arrangements near mines, administration, and the metallurgy of mining. In the lectures on AGRICULTURAL SCIENCE, among the subjects considered are the structure and functions of plants, the nature of soils, the preparation of land for tillage, tillage operations, manures, succession of crops, plants cultivated for seeds; roots, tubers, and leaves; plants used for herbage forage, plants yielding fibre, weeds of agriculture, and live stock and their management.

Notwithstanding the wide range of subjects embraced, the soundness of the instruction given in the College seems well attested by the fact that since the Whitworth Scholarships have been offered for public competition one or more have been taken each year by students in the College. This is, we believe, with a single exception the only instance in which these scholarships have been obtained by pupils receiving instruction in Irish schools or colleges. Some of the students of the College have also distinguished themselves at the higher examinations of the London University and elsewhere.

Those who, like ourselves, have had the pleasure of personally inspecting the different departments of the College cannot fail to be amazed at the magnificent appliances for scientific instruction possessed by the Royal College of Science. Considering its comprehensive character, it is quite unique in this country. We are surprised that it is not more widely known, nor more advantage taken of the help it was intended to offer to students of the applied sciences.

VAN CONSOLS MINE.

SIR,—As there seems to be very many opinions held by different parties respecting this property, perhaps you will allow me, as a person to whom the mine has been known for upwards of 30 years, to express mine also. I find that the agent and a director have been blamed for driving a shallow adit level, in order to prove the vein near the surface. Now, for my own part, I can see no reason to attach any censure to anyone for making such a trial, for it is a well-known fact that a great many mines, both in Cardiganshire and Montgomeryshire, make rich courses of ore up to the very grass—instance, Old Goginan, Cwmsymlog, or East Darren, Old Darren, and, in fact, most of the richest mines in this county. And suppose we take the case of Van Consols. More than 30 years ago this property was worked over the adit level by a Mr. Daniel Gell, who opened out a good many mines in this district, and for a poor working miner did more than any of that class that I know of in that respect—that is, the finding and opening of mines. Mr. Gell was unable to proceed with the working of Van Consols (then Bryntaile) personally, and had to borrow several hundred pounds of a Mr. Evans, shipowner and builder, Aberystwith. This gentleman called me in to inspect the property for him, and I was so satisfied with the prospects before me that I offered Mr. Evans', if he would allow me the management of the mine for 18 months, that I would pay off his claim, and this would have been acted on had not the mine changed hands and Mr. Evans' claim been settled. This shows, therefore, that good ore was shown near the surface in this property, and if proper sections are kept the truth of what is here stated will be verified. It is not an unusual thing to find these smaller courses of ore shallow; they are sure indications of greater courses of ore below. For instance, take East Darren, perhaps the richest course of ore and the richest mine in Cardiganshire, and you will find that above the 30 there were good courses of ore, but from the 30 to the 68 fm. levels they went through a barren piece of ground, they then entered the great mass of lead ore which has continued till this day, and such is the case at Van Consols I will venture to predict. You had ore at this adit and above, you have passed through your poor ground, and have seen the tops of the courses of ore just coming up to say, as much as "I am here;" just follow me down a few fathoms and you will have me bodily, and so you will." And if Mr. Greene's suggestions be followed the shareholders will get another Van, for it is the identical Van lode, and will be as good a one.

ABSALOM FRANCIS.

[For remainder of Original Correspondence see this day's Supplement.]

COAL MINING IN ITALY.

Observations on the Coal Mines worked by the Commendatore Ferrari-Corbelli in the Tuscan Maremma. By the Engineer Signor Constantino Haupt. Translated from the Italian by Capt. JACOB, mining engineer, author of "Yrisca Silurum," "Recollections of Rome," &c., &c.

INTRODUCTION.

In the plains of Monte Massi and Tatti, two small towns of the Tuscan Maremma, which took their rise from ancient castles of the Middle Ages, erected on the rocky prominences which bear these names, about 14 years ago commenced to unfold itself the first germ of the coal mining industry of the Tuscan Maremma, which by technical and scientific reports on the one side, and the merit and the copious quantity of its productions on the other, has proved to the common advantage of science, of industry, and of national economy.

Under this impression that active nobleman, the Signore Commendatore Luigi Ferrari-Corbelli, after having elucidated the most reasonable manner of doing so, commenced the working of the same with a perseverance which was most rare and unique, notwithstanding all the obstacles of various kinds which interposed themselves. A large capital was laid out upon the works to bring them to their present state of efficiency, and enable them to supply annually a large quantity of very excellent combustible,* useful for many and various industries. An annual output of 100,000 tons can without difficulty be obtained, and this for a long course of years.

SHORT HISTORICAL SKETCH.

After several ineffectual attempts made by the Grand Ducal Government in the years 1837 and 1838, especially in the plains of Monte Massi, of Pietra, and in the high plain of Acqua Nera, near the small town of Sasso Fortino, with the intention of proving the existence of true coal in the localities, a "Societa Anonima" (equivalent to our English Limited Liability Companies) obtained in the years 1839 and 1840 the right of excavation of the relative properties of the plain of Monte Massi, and commenced a work of research in the year 1841. The first Tuscan pit was sunk to the depth of 136·85 yards. The first coal stratum was reached at a depth 10·90 yards, and the second at a depth of 148·75 yards. This second being about 1½ yard in thickness. These two strata belong to the Upper Miocene geological formation, and consequently not of the period contemplated by this society.†

The third stratum of coal (that of the Acqua Nera) was found to belong to the Lower Miocene formation, which has for its bed carboniferous limestone. This coal contains in itself combustible qualities of a superior class, and is of a more remote origin than the two upper seams of coal before described. The first pit proving to no account, the society opened two new ones in better positions to take the different strata, and re-constructed the various roadways, galleries, and inclines. In short, by the execution of such work the capital of the company was totally exhausted, and for the reason the works were again suspended in the year 1848. The pits and galleries were not kept in repair, so that in a very short time they crumbled and fell in completely, and for ten long years the splendid coal deposits lay buried and forgotten.

The afore-mentioned nobleman, the Signor Commendatore Luigi Ferrari-Corbelli, in the year 1858, acquired from this company the subterranean rights. By means of new pits and galleries of research he completed the exploration of the extension of this coal field, and proved beyond doubt the most excellent character of the combustible. In the year 1850, nevertheless, discoveries of coal were made in the plain of Tatti, and especially in the bed or the defile of Casteani, in the bed of the torrent of Follonica, and in the bed of the torrent of Ribolla, of which Messrs. De Mailland, Callion, and Company acquired the right of excavation; they commenced some insignificant works, and in the year 1858 they also sold their right of excavation to the afore-mentioned nobleman, the Signor Commendatore Ferrari-Corbelli. Finally, in the year 1860, the same nobleman bought the greater part of the rights of excavation of the coal field of the Acqua Nera, near the small town of Sasso Fortino. Thus, the principal coal fields at present held by the Commendatore Ferrari-Corbelli are:—

(a.) The coal mines of the Poggio Moretto in the plains of Monte Massi;

(b.) The coal mines of the Ribolla and the Follonica, bounded on the south by the above-mentioned property;

(c.) The coal mines of the Casteani in the plains of Tatti, bounded on the south by the last-mentioned coal fields of Follonica and Ribolla, and

(d.) The coal mines of the Acqua Nera, which are by far the best of the above-mentioned coal deposits, which, as before stated, lie not far from the before-mentioned small town of Sasso Fortino.‡

Of the four mines above mentioned the only one actually worked at present (by the Commendatore Ferrari-Corbelli) is the third, that of Casteani, which as yet is not by any means opened out on a scale at all adequate to the capacity of production of these collieries. From the commencement of the works the coal from these mines was chosen for commercial purposes before all others, it being preferred rather than the others on account of its geological position, its wide extent, and its excellent quality. The whole of these considerations rendered its sale more efficacious, and especially the fact of its being very near the railway station of the Roman and Leghorn Railway, so that in the actual plains of the Tuscan Maremma we have a great coal mining enterprise already begun and, as we may say, fairly set on its legs, and put into a regular course of legitimate and certain development. In the next year after the opening

* These mines are now regularly supplying the Roman Railway with coal; indeed, the amount of trade which may be done with the coal of the Tuscan Maremma is incalculable.

† This society appears to have fallen into the same error as Montelli and other "eminent engineers," who believe that these Tuscan coals are of the Secondary period, whereas they are of the Tertiary, although, as I maintain, and as recent analyses prove, superior to many coals of the Secondary period in England. They belong to the same period as the county of Antrim coal in Ireland, and the island of Mull, in Scotland, but it is, I believe, infinitely superior to, and more regular than, those coal fields.

‡ This is the identical property upon which Mr. Brunton made his celebrated report, under the impression that it belonged to Montelli, and in which the Brunton cross-heading and the Brunton galleries are made, and concerning which a suit is now going on between the Commendatore Ferrari-Corbelli and Montelli. To assume that the property is or ever was Montelli's would be simply ridiculous. This identical property has actually been worked by the Commendatore Ferrari-Corbelli years before the existence of the Sasso Forte Collieries Company was dreamt of. These workings were conducted under the superintendence of Signor Baldassare Mucarelli, an old and much-respected agent of the Commendatore Ferrari-Corbelli, who is now enjoying a pension for life from that nobleman. I wish it to be distinctly understood that in what I am here saying I am imputing no wrong or *mala fide* to Mr. Brunton, for that gentleman, like myself and three other gentlemen whom I could name, were deluded into the belief that the property actually belonged to Montelli, and on the strength of that belief it has been worked by the Sasso Forte Collieries Company for many months—a good part of the time under my supervision. That the Sasso Forte Collieries Company—a society of honourable English gentlemen—should get their names connected with that of such a person as Montelli, in Italy, is most unfortunate, not only for the company, but for all other English undertakings in Tuscany. That gentleman is all very well, I have no doubt, in his own profession, but he has no right to associate the names of honourable men with his doings in Italy. The name of an Englishman is held almost sacred in this country, and it is deemed almost an impossibility that an Englishman could be guilty of a mean or dishonourable act. The name of an Englishman in Italy is synonymous with honour, wealth, and good nature, and it is our interest to preserve that character.

these mines, those adjoining commenced excavating coal—those in the torrent of Follonica called Casetta Papi.

N.B.—These places lie almost immediately under the small town of Monte Massi, which has sprung up around a very historic old castle of the Middle Ages, situated on the summit of the hill bearing this name.

TOPOGRAPHICAL POSITION OF THE MINERAL RIGHTS OF THE COMMENDATORE FERRARI-CORBELLI.

The lands of which the mineral rights have been conceded to the Commendatore Ferrari-Corbelli form a plain of vast extent in the Tuscan Maremma (besides those of the Acqua Nera, which lie up in the mountains beyond Sasso Forte). Those on the plains lying between one hill and another, the contour of which is plainly visible from the Roman Railway, and can clearly be distinguished by the eye of anyone who knows anything of geology as being carboniferous ground. It is run through by various small rivers called *torrente*, and brooks called *fossi*. The principal rivers are Confiente, Carsia, Follonica, Ribolla, and Asina, and the brooks are Magnaratico, Rio Petroso, Raspolino, &c., &c. The area of the rights of excavation of the Commendatore Ferrari-Corbelli on these plains, exclusive of his rights at the Acqua Nera, are 33,500,000 square metres of the Italian measurement, which is made up as follows:—

A.—Collieries of 'Casteani. Between the river of Confiente and that of Follonica, 4452 Italian metres in length, and 4300 in width =19,143,600 square metres.

B.—The mines of the Follonica Ribolla. From the river Follonica to the brook of the Valletta, 960 Italian metres in length, and 3200 in width=3,072,000 square metres.

C.—The collieries of the Poggio Moretto, in the plains of Monte Massi. From the brook of the Valletta, ending at the River Asina, 3209 Italian metres in length, and the same in width=11,254,709 square metres. [*To be continued.*]

THE IRON AND COAL KINGS OF THE NORTH.

VI.—MR. LINDSAY WOOD.

Throughout the whole of the North of England the name of Mr. Nicholas Wood is scarcely less familiar than that of George Stephenson his friend and collaborateur. Born at a farmhouse within a mile of Bradley Hall and the railway station at Wylam, Mr. Nicholas Wood deserved more than most men the appellation of self-made. In 1811 he was sent to Killingworth Colliery by Sir Thos. Liddell, afterwards Lord Ravensworth, to learn the business of a viewer. George Stephenson had then begun to attract some degree of attention by his inventions, and in his capacity of engineer at Killingworth Colliery he made himself intimate with young Wood. A life-long friendship was cemented between the great engineer and the young draughtsman, serving his apprenticeship. Stephenson wanted someone to aid him in his inventions, by reducing them to something like the required mathematical formulæ, and Mr. Wood, being a good arithmetician and draughtsman, supplied the want. On Nov. 5, 1815, Stephenson brought the safety-lamp that bears his name under the notice of the Literary and Philosophical Society of Newcastle, and young Wood became his expositor and spokesman, having reduced the ideas of the inventor to paper, and rendered him every assistance in getting the lamp into practical working condition. About 1844 Mr. Wood removed from Killingworth Colliery to Hetton, where he assumed the management of the collieries belonging to the Hetton Coal Company, in which he afterwards became a partner. He was appointed the first president of the Mining Institution of the North of England, which subsequently changed its name to the North of England Institute of Mining and Mechanical Engineers. Before that now distinguished society, of which he may well be said to have been the founder, he read a number of papers that attracted the notice of mining engineers in all parts of the world, and stamped their author as one of the most able and original—if not the most able and original—mining engineers of his day. Before almost every committee appointed by Parliament to deal with the subject of our coal supply, accidents in mines, and cognate subjects, Mr. Wood was examined during his latter years. In 1835 he was examined at great length before the first committee of the House of Commons, appointed to deal with the subject of mining accidents. Again, in 1849, when a committee of the House of Lords was receiving evidence on this subject, Mr. Wood was examined as to the merits of the steam-jet for ventilating purposes. He had tried the jet, and found it wanting, and although it was then the fashion to consider the steam-jet as the most efficient mode of ventilation that had been devised, Mr. Wood did not hesitate utterly to condemn it. Another committee of the House of Commons was appointed to deal with the same subject in 1852, and Mr. Wood again expressed his preference for furnace ventilation over the steam-jet. In the following year another House of Commons committee had Mr. Wood under examination for three days, one-half of which time was devoted to testing his reasons for objecting to the steam-jet. Mr. Wood's preference has since then been more than justified, for the steam-jet as a means of ventilation never came to be extensively adopted, and its use has now been entirely discontinued. Mr. Wood has also been recognised as the author and leader of the movement inaugurated some 10 or 15 years ago for the establishment in connection with Durham University of a college of physical science. The movement was not altogether successful in the direction intended by its author, but the fruits of Mr. Wood's labours have since been realised by the establishment in connection with the Literary and Philosophical Society of a college of physical science, to which the youth of Durham and Northumberland have access on easy terms, and in the Wood Memorial Hall, a palatial edifice erected to perpetuate his works and memory, the engineers of the North have testified that the name of Mr. Nicholas Wood is one they will not readily allow to perish.

Such was the father (who died a few years ago) of Mr. Lindsay Wood, the chief owner and viewer of the world-famous Hetton Collieries, in the county of Durham. Of the son we may say no less truly than of the sire, that he has taken a leading position in connection with the coal trade of the North. From his father he inherited an example and experience that has left him with few rivals, and no superior, among the many eminent mining engineers connected with or springing from the North of England, and the management of the extensive and valuable property entrusted to Mr. Wood's care has been carried on with a judiciousness and enterprise that has served to enhance rather than diminish the lustre of the reputation that belongs to the name of Hetton.

So many descriptions of the Hetton Collieries have already been furnished that it is quite unnecessary to say anything about them here beyond indicating the special features of their career under the supervision of Mr. Lindsay Wood. For at least 15 years past Mr. Wood has been indefatigable in his endeavours to bring to perfection at Hetton some of the numerous forms of coal-cutting machines brought before the notice of the mining world during that period. The *Mining Journal* of April, 1863, contained a lengthy account of experiments made in the presence of Messrs. Forster and Cochrane, at Hetton Collieries, with one of Ridley's coal-cutting machines, when the time occupied in actually kirving 10 yards to a depth of 38 in. was 22½ minutes, or 1 yard in 2½ minutes, exclusive of the time occupied in reversing the machine. This was one of the first, if not the very first, coal-cutters tried at the Hetton Collieries, but it was only the precursor of many others, for since that date at least a dozen other machines of different kinds and capacities have been experimented with at the same colliery. A paper read before the Cleveland Engineers last session by Mr. Jeans, of Darlington, set forth the results obtained by one of Baird's Gartsherrie machines; and since that time considerable progress has been made in the direction of extending the application of the Gartsherrie machine, for the successful working of which a large and costly plant has been laid down on the pit bank. Firth's, Jones's, and Harrison's machines have all been under trial at Hetton, but none of them have been found so perfect as to justify their general adoption. From these experiments, however, the public have learned more than they otherwise could have done regarding the capabilities of coal-cutting machines, and the drawbacks that still operate against their practical working.

The subject of coal-cutting machinery at Hetton leads us to speak of the evidence furnished by Mr. Lindsay Wood before the Commission appointed in 1869 to enquire into the probable extent and duration of our coal supplies. Mr. Wood, whose evidence was of great assistance to the Commissioners, declared that in his opinion coal-cutting machines would yet be extensively introduced, that they would take the place of the hardest part of the labour of colliers in deep mines, and that coal-cutting machinery must be looked to as one of the most efficient means of reducing the temperature in mines deeper than 3000 ft. It is rather a noteworthy circumstance that in spite of repeated failures and discouragements, Mr. Wood still continues to persevere with coal-cutting machines, and looks forward hopefully to the day when the accumulated labours of inventors shall be crowned by the complete and unequivocal success of mechanical coal-cutting.

At no colliery in the United Kingdom have more scientific observations on the conditions of temperature been taken than at Hetton, and by no viewer or colliery owner has greater facilities been afforded for making the science of coal mining more perfect in this or in other directions. Almost every form of safety-lamp known to the mining world (and their name is legion) has been tried at Hetton, but it is worthy of remark that Mr. Wood and his men still prefer to continue the use of the old Davy and "Geordie" Stephenson lamps in preference to others of more recent origin. There are few lamps that have not had some inherent and unsurmountable weakness that could not but cause disappointment in the minds of men who like, above all things, to realise something thoroughly practicable, and although it has been proved over and over again that the Stephenson lamp is not absolutely safe in a current of foul air of a certain not unfrequent velocity, it is so manageable and reliable in all other respects that it is still, perhaps, the most popular safety-lamp in the North. Special provisions are made at Hetton for the testing of safety-lamps, and no inventor of a new lamp need go beyond this colliery for the facilities he wants.

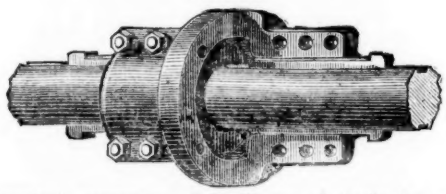
Mr. Wood was again summoned to give evidence on the state of the coal trade before the Commission appointed by the House of Commons in 1873 to deal with the subject of the recent scarcity and dearness of coal. It will be remembered by those who read the report of that Commission that Mr. Wood's evidence was at once minute, clear, and exhaustive. He showed that the hewers of 152 collieries from which he had obtained returns had only worked 9·01 days per fortnight in 1873, as compared with 9·2 days per fortnight in 1871, and that whereas they raised an average of 1097 tons per man in the latter year, they only raised 940 tons per man in the former, being a difference of 14 per cent. Before this Committee rose Mr. Wood stated that he found a considerable economy effected by the use of coal-cutting machinery, and that he was erecting at Hetton machinery to employ a number of mechanical coal-cutters—we believe on the principle of the Gartsherrie machines, while it is worthy of note that by the use of this machine Mr. Wood found 14½ per cent. more coal got per man than was obtained by mannal labour in the same seam—the machine developing 10-horse power in actual working in the face.

Mr. Wood has inherited an interest in some of the extensive mineral properties owned by his deceased father, who was proprietor of the Black Boy, Coundon, Westerton, and Leasingthorne Collieries; a member of the North Hetton Coal Company, owning the collieries of Kepier Grange, Rainton Grange, Moorsley, and Seaton; a partner in the Marley Hill Collieries, along with Mr. C. M. Palmer, now M.P. for North Durham, Sir William Hutt, and Mr. John Bowes; part owner of the Harton, St. Hilda's, and Jarrow collieries; and managing partner of the Hetton Coal Companies, owning the three collieries of Hetton, Elemore, and Eppleton.

Like his father, Mr. Lindsay Wood has taken an active part in the transactions of the North of England Mining and Mechanical Engineers, having contributed several papers to the Institute; and in the Durham coal trade generally he occupies a position of conspicuous honour and usefulness, as is evidenced by the fact that he was recently appointed, along with Mr. Armstrong, to prepare the case of the Durham mine owners in their application before the arbitrators, who sat at Newcastle a fortnight ago, for a reduction of 20 per cent. in miners' wages.

Mr. Wood married rather more than a year ago a daughter of Capt. Barritt, of Heighington, near Darlington. In politics he is a Conservative, although not of the deepest dye.

NEW SHAFT COUPLING—IMMEDIATE REPAIR OF BROKEN SHAFTS.



The constant recurrence of breakages of shafts by sea-going steamers, resulting in annoying delays, not unfrequently accompanied by considerable danger, must have been noticed by all who, though unconnected with mercantile marine affairs, have glanced over the shipping news; so that very few persons will be unable to appreciate the importance of an invention which permits of a broken shaft being restored to working order in the course of a few hours at most, and whilst a vessel is still on its passage. Such an invention has been patented by Mr. Cromwell F. Varley, C.E., F.R.S., and an influential company—the Steamship and Factory Shaft Coupling Company—with a capital of 150,000*l.*, in shares of 5*l.* each, has been formed to develope it. In a recent experimental trip which took place on the Thames the Era had one of the junctions of her screw-shaft uncoupled, thus representing a broken shaft, and during the voyage Mr. Varley's coupling was able to be taken off in eight minutes, and put on again in little more than a quarter of an hour, by the engineer and his assistant, notwithstanding the loss of some minutes in having to take out four of the screws, which had been put in wrongly, and the hindrance caused by the crowding of visitors into the screw-alley. To cut such a groove as would be required for the two keys would occupy from three-quarters of an hour to an hour and a half, and to chisel off a flat side would take less, as the work need not be so accurate. It is clear, therefore, that the time of execution would be practical, and quite speedy enough to be of essential service. One point has been most satisfactorily settled by the trials—that the Varley coupling will allow the engines to be worked at full speed without detriment to the coupled part, for, as a matter of fact, the coupling had been in use for some time previously to the experimental trip, and continued in use long after—indeed, may be running still for aught we know—the shaft being in every respect as strong as if it were in one piece.

The Varley coupling is extremely simple in construction, and so easy of application that travellers and merchants will henceforth have good reason to complain if they suffer from delay caused by a broken shaft. The coupling itself is made in four pieces, each of which is bored on the insides, so as to fit the curved surface of the shaft on being applied to it. As it is found in practice that, in the case of the shafts of screw steam ships, they frequently break near the flange by which successive lengths of them are united, each portion of the coupling is expanded at one end into a hollow cylindrical surface of larger diameter, so that the original flange of the shaft may be compirtely covered by the coupling. Thus, in every case of fracture of the main shaft of a marine engine, when the four parts of the coupling have been placed in position on the shaft, the two end quarters on either side bolted together by transverse nuts and screws, and then the two halves of the whole coupling connected by longitudinal ones, the whole of the fracture is covered in by a strongly-made tubular structure, or as much of it as may be necessary is to key the coupling to the shaft in order to ensure its revolution simultaneously with that of the two portions of the shaft, and, therefore, that of the whole shaft itself, as if it were still in one unbroken piece. This is accomplished by means of the two keys. Each is inserted in the groove cut in the shaft to receive it, and the loose coupling is turned until the correspoeding cavity formed in coupling comes over it; the key is then driven home, and the coupling is made fast to the shaft on that side. A similar operation is performed on the other key, and the perfect repair of the shaft is completed. The invention is such an essential requisite to sea-going vessels that it cannot be doubted that those undertaking its introduction will find an ample demand for it, whilst its marketable value as compared with the cost of manufacture must leave a large margin for profit, especially when it is considered that the coupling is equally applicable to land machinery, and would frequently be of importance by permitting the continuance of work until a convenient opportunity for making the repairs presented itself. In factories great numbers of hands are often thrown out of employment for a long time by the breakage of main driving shafts, and the loss inflicted upon owners and men by the stoppage of a mill in consequence is very severe. By employing one of this company's couplings a fractured shaft can be restored to work almost immediately.

With regard to the terms upon which the company is to acquire the patents, it is mentioned in the prospectus (which will be found in another column) that of the 50,000*l.* to be paid only 15,000*l.* is to be in cash, the vendor accepting the remainder in shares of the company; and as the company deals direct with the patentee there will be no promotion money beyond the cost of advertising and registration. It is proposed to make immediate arrangements for the manufacture of the company's couplings, and the result of careful estimates of the cost of manufacturing them, and the price for which they can readily be sold (assuming that only 10 per cent. of the vessels afloat adopt them), is that the annual profits will yield a handsome percentage to the shareholders on the nominal capital. In these estimates no account has been taken of the number of couplings which it is believed will be required in factories, mines, pumping works, and other undertakings, when once the company is in a position to supply the demand. The company bas unquestionably a good property to work upon, and with judicious management success ought not to be difficult of attainment.

THE IRON TRADE OF THE UNITED STATES.

Such rapid progress has been made in the development of the iron manufacturing industries of the United States within the past few years that the necessity for a really reliable directory and manual devoted to them has become every day more necessary, and it is gratifying to find that the task of providing such a work has been accomplished in the best possible manner. Wiley's American Iron Trade Manual* will, amongst all connected with the iron trade, be generally recognised as indispensable in the works and counting-house, just as the "Post Office London Directory" is similarly recognised by commercial firms in London. The volume contains excellent accounts of the anthracite furnaces, charcoal furnaces, and raw bituminous coal and coke furnaces of Pennsylvania, as well as of the blast-furnaces of Ohio, Kentucky, Michigan, Virginia, and the various other iron-producing States of the Union. As a directory, the volume embraces the blast-furnaces, rolling-mills, Bessemer steel, crucible steel, locomotive and car works, car wheel foundries, cast and wrought-iron pipe and tube works, stove manufacturers, iron bridge works, &c.; details of the iron shipyards and iron ore regions of the United States; and directories of the general machine works and of the master mechanics and master car builders of the United States, the arrangement being such that whether information be sought with regard to the extent to which the various departments of the iron industries are carried on in any particular State, or with regard to those engaged in some special branch throughout the States, it can be obtained with the utmost facility.

The earliest data obtainable with reference to the manufacture of pig-iron in the United States are connected with works in Virginia in 1620, but the industry seems to have been very circumscribed. In 1810 there were 153 blast-furnaces, producing 53,908 tons of pig-iron; there were 330 forges producing 24,541 tons of bar-iron, and 316 hammers, the 34 rolling and slitting mills consumed 6500 tons of pig-iron; and there were 410 nalleries, producing 15,727,914 lbs. of nails. The value of pig-iron made in that year was $3,616,457. In 1840 the industry had greatly advanced, yet only 286,903 tons of pig-iron was produced; but between that date and 1872, the last year for which statistics are available, the progress has been enormous, the produce of pig-iron in the latter year having been 2,830,070 tons of the value of $90,000,000. Comparing this with the produce of Great Britain, it will be found that the tonnage is nearly equal to one-half, and the money value within $3,000,000, the figures for Great Britain for 1872 being 6,741,929 tons, of the value of 18,540,304*l.* The total importation of pig-iron into the United States in 1872 was 193,957 tons, which, with the product above noted, gives a consumption of 3,024,027 tons, against 411,903 tons in 1840, or 32 years previously being over 700 per cent. With regard to blast-furnaces the manual gives the name of the company owning them, name of president, number and location of furnaces, height of stacks, diameter of boshes, average annual product, and character of ores used, so that more complete particulars could scarcely be desired. The details relating to works connected with other branches of the trade are equally copious, and the volume, moreover, contains so much general and very interesting information that we shall draw largely upon it upon future opportunities in giving an outline of the present position of the iron industries of the United States, and the facilities existing for their extension.

* "Wiley's American Iron Trade Manual of the Leading Iron Industries of the United States, with a Description of the Iron Ore Regions, &c, of the Country, giving their Location and Capacity of Product." Compiled and Edited by THOMAS DUNLAP. New York: John Wiley and Sons, Astor-place. London: Trübner and Co., Ludgate Hill.

SUCCESSFUL LEAD MINING IN NORTH WALES.

In another column appears the prospectus of a new mining venture in North Wales. The St. David's Lead Mining Company (Limited) is launched under auspices identical with those by which the South Prince Patrick Mines have been brought to their present highly satisfactory position. It will be remembered that about this time last year a few Birmingham gentlemen organised this property, and risked their own capital in preliminary works before offering any shares for subscription. The prospectus was in due course advertised and circulated, but the public, enamoured probably with the pretensions of the numerous foreign enterprises so dear to the London promoters, disdained the modest, and on the face of it *honest*, proposals of the directors to test the well-known resources of the Halkin Mountain. The shares applied for failed to reach the amount of the advertising bill; but, nothing daunted, the seven who registered the company found the capital required, and their judgement, foresight, and courage have been amply rewarded. During the past seven months they have sold lead ore to the value of nearly 2000*l.*, have paid a dividend of 2*s.* per 1*l.* share, are raising ore at the rate of 40 tons per month, and the shares of the company are saleable at cent. per cent. premium. Under precisely similar circumstances the Birmingham gentlemen invite the public to join them in their second venture—the St. David's Lead Mining Company (Limited). These mines were successfully worked when lead ore was saleable at only 8*l.* per ton, they have been re-opened, and afford promise of great success. Ore has already been found in paying quantities, and a parcel will be ready for the next ticketing at Holywell. Here, then, is another opportunity for the investing public to join a genuine home enterprise. Will they take up the 3000 (1*l.*) shares which are now offered for subscription, or will they wait for the launch of another foreign bubble?

BOTALLACK.—This mine has a splendid sampling of copper ores this month. Some of the qualities of the ore are said to be excellent, and probably the value of the lot sampled on Friday last for the next ticketing may be estimated at considerably over 1000*l.* The prospects of the mine at both Wheal Cock and Carnyorth are reported to be most encouraging. There is a fine lode at Wheal Cock 140 fm. level going north, all in whole ground, about 4 ft. wide, highly mineralised, and which will pay well. This is probably the celebrated Corpus Chrisii lode, which has been hitherto enormously productive through Botallack for an immense length. Carnyorth is also yielding large returns of tin, and it is estimated that the next meeting of the adventurers is likely to be a most satisfactory one, as far as the progress and position of the mine is concerned. It is probable there will be a considerable surplus profit on the quarter's working.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—S. Toy, Oct. 28: The No. 2 adit driving east is still producing stones of lead, and of a kindly appearance. The men in rising above this level are making fair progress; we are rising on the south and soft part, where we occasionally meet with good stones of lead; we have about 4 fathoms more to rise before we shall blast into the north and productive part of this lode. No. 4 stope over this level is worth 13*l.* per cubic fathom for lead. In the east part of the set we have now opened on the back of the quartz lode 85 fathoms in length; in the first 50 fathoms the lode is of a regular bearing, 4 ft. wide, but much wider at surface, and producing some good stones of lead, but it is a very hard lode, and expensive to work. In the last 35 fathoms the lode is split off in small branches, and its underlie south is 3 ft. in 1 fathom more than what the Aberdaunant lode is, consequently, the present appearance indicates to me that there is not much chance of those two lodes forming a junction in the east part of our set.

AMNODD AND NANTDDU.—John Kemp, Oct. 29: In sinking our engine-shaft I am sorry to say that our men have had the misfortune to break the slide of our sinking-lift; this has been rectified, and the lift again in good working order, and the shaft is going down in nice congenial ground for the production of lead ore, but I am sorry to say our progress is very slow indeed, in consequence of the scarcity of men, they having refused to work without being employed by day-work—this, of course, we cannot allow.

BAMPFYLDE.—S. Mitchell, Oct. 23: We give the following extract:—"I can now tell you I have 170 tons of copper ore at surface, 100 tons of which is ready for market. In conclusion, I will say that ever since I have been in North Molton, which is nearly 25 months, I have not laid open and discovered less than 3000*l.* worth of mineral each month if sold at a fair market price for the time being."

— S. Mitchell, Oct. 27: Without particularising either, the copper stopes throughout the mine are looking fully as well as they have been for some time past. The mine is in fork, and all our operations underground are going on satisfactory, and the ore is being forwarded to the railway station. I have now fully 170 tons of copper ore at surface, about 16 tons of which is prill ore, which will realise a high price. I am getting on with the new stamps, and will endeavour to put it together before I leave. The tramroad is complete, and you can pass your iron ore over it in quantities as soon as the Messrs. Hawkins Company have fixed their points.

— H. T. Haley, Oct. 27: Iron Mines, Stowford: We have holed the lobby to No. 2 shaft, and the men are stoping the bottom, which will be 9 ft. deeper at this shaft; we are also clearing the level eastward from this shaft as fast as possible, and hope to be able to resume the driving east of No. 3 shaft in another week. We have not reached the lode in the eastern cross-cut. The north lode in Stowford Hill is looking very promising, the ground about the lode is of a much better character.

BEDFORD UNITED.—W. Phillips, Oct. 29: The lode in the midway east and west, in the back of the 115, is worth 20*l.* per fathom at each point, and is still promising to continue a source of profitable returns. In the 103 east the lode is 3 ft. wide, worth about 10*l.* per fathom, and is looking promising; this end is being pushed on by six men in the hope of speedily reaching the dip of ore from the 90. The lode in the 103 west, or part being carried, is 18 in. wide, worth 12*l.* per fm., and is promising improvement. The stopes in the bottom of this level yield on an average 4 tons of ore, or abo.t 12*l.*, per fathom.—South Lode: In the 47 east the lode is 2 ft. wide, composed of spar and mundic, mixed with copper ore to save. This end must now be near the eastern cross-course, which it is hoped will produce a favourable change. The rise is being carried by the side of the lode, and good progress is making. The 34 east is suspended in order to improve the ventilation of the rise. The 34 west is producing a good quantity of mundic, with a little copper ore, and is a most kindly-looking lode.

BELSTONE.—J. Neill, Oct. 24: A Shaft: The sinking is being proceeded with as fast as the nature of the ground will permit, the component parts of which are capel, greenstone, garnet, and quartz, with branches of arsenical mundic and spots of copper ore; the cross-course still underlies about 1 ft. in 6 ft. Sunk this week, 1 ft. 9 in.; depth of shaft, 74 fms. 3 ft. 6in.—C Shaft: The stope from the rise in back of intermediate level east, on small cross-course, is looking better than it was last week; it has improved since yesterday. The matrix of the lode around the ore is very congenial, and the ore is very good.

BOG.—W. T. Harris, J. Barkell, Oct. 27: In the engine-shaft at the 175 we have three ends in course of driving—west on main lode, west on whitestone lode, and east from junction on south lode. The south lode, going east, is opening out some fair tribute ground, and producing 1 ton of lead ore per fathom. The end going west, on main lode, is yielding good saving work for the dressing-floors, with every prospect of an early improvement, and any ore cut into this driving would be principally in whole ground up to the 163. The lode in the west end, on whitestone lode, is worth 40*l.* per fathom, and a lode equally as good is gone down in the bottom for a considerable length, but in the back we have had to work away the ore, and keep pace with, and even go beyond, the driving. This has been done at a great disadvantage and extra expense, purposely to keep up the samplings. What is wanted is to push forward these bottom ends, and the upper levels also, and lay open ground properly, and we have no doubt as to the result being successful. The tributers in the upper levels are earning fair wages, at from 7*l.* to 8*l.* per ton for lead and 25*s.* to 40*s.* per ton for blende, and as our operations are not confined to one lode this mode of working, with the aid of short cross-cuts to cut side branches, can be profitably continued for years to come, and materially aid in paying the general expenses of the mine. We would again beg to call your serious attention to the eastern part of the mine—Buntin's and Weston's shafts—where the lode is seldom without ore in paying quantities from above the adit level to the 100, and it is our firm belief that a few hundreds of pounds spent in this direction would lead to lasting and profitable results.

BURROW AND BUTSON (St. Agnes).—J. Christophers, J. Mayne, H. von Uster, F.G.S., Oct. 28: At the 62 we are driving east on a strong, kindly lode, 6 ft. wide, mixed with copper and mundic. At the 62 west the lode is small and disordered. We are driving the 50 west to enable us to sink a winze to meet the present end of the 62, by means of which we shall prove the lode and ventilate both the levels. At the 40 west the stope in the back is worth 2½ tons of blende per fathom. The 30, west of Tonkin's, in the back stope, is worth 3 tons of blende, with saving work for lead. The 30, east of Tonkin's, is being driven east on the north, or lead lode, with all practicable speed. At the 20 the stope in the back, west of Tonkin's, on the main lode, is worth 2 tons of blende, and saving work for lead. The end driving west is worth 2 tons of blende. The winze we had to stop for a short time, the 30 not being east enough to drain it. The shafting and wheels are home from the foundry for working our old jiggers by means of our 25-in. cylinder crushing engine, which will enable us to set our work on tribute. We are very busy putting down pitwork at Williams's shaft, where we expect good results for copper at the intersection of the main lode by a caunter, both being in whole ground down from the 10 under adit.

CAEGYNON.—T. Hodge, Oct. 26: We are making good progress in the 70 east end, and I hope to reach the junction of the lodes in another 6 ft. driving. We have touched the wall of the south lode, but do not intend to cut it through until we reach the point of horse at the junction. No other change to notice.

COURT GRANGE.—E. Dunkin, Oct. 29: We are still making fair progress in forking the water below the 31. The last two or three days, however, owing to the severe wet weather, the draining has not been so rapid as before, but I am hoping by the end of the ensuing week the 40 will be dry. The dividing of the shaft will soon be completed, and also the footway as far as the water is out. There is no alteration in the value of the lode in the 31 east since last week. The men are making better progress than heretofore in stripping it down, as the lode is less vughy than formerly. In New Broginan shaft the lode remains unaltered in value, but I should not be surprised fo see an improvement any day, the ground being of such a favourable character for mineral. The drawing-machine is now in place, and the necessary arrangements, pulley-stands, poppet-heards, &c., are in course of construction as far as the carpenters can make them.

CRENVER AND WHEAL ABRAHAM UNITED.—W. Thomas, J. Hammill, Oct. 28: Sturt's Engine-Shaft: In the 228, driving west, the lode has much improved, and is now 2 ft. wide, yielding 1 ton of copper ore per fathom, letting out much water, and promising for further improvement. In the 215 west the lode is 2 ft. wide, producing 1 ton of copper ore per fathom; this end is still spare for driving, but we have a good pare of men in it. In the winze sinking below the 215 the lode is 2 ft. wide, and yields 1½ ton of copper ore per fathom.—St. George's Shaft: In the rise in the back of the 203, on the south lode, the lode is 1½ ft. wide, also producing 1½ ton of copper ore per fathom. We are in daily expectation of communicating to the winze sinking below the 190.—Woolf's Shaft: In sinking this shaft below the 208 the lode is 4½ ft. wide, yielding 2 tons of copper ore per fathom. The shaft is about 7 fms. below the level. In the 208, driving west, we are still in the cross-course, which at this point is unusually wide, and letting out much water.—Vivian's Shaft: In the 220 east the lode is 3 ft. wide, yielding a little copper ore. We think this end will shortly improve.—Pelley's Engine-Shaft: In the 248 west the lode is 2 ft. wide, producing good stones of tin and a little copper ore, having a better appearance.—Blewitt's Shaft: In the rise in the back of the 220, against Richards's shaft, the lode is 4½ ft. wide, and produces 1½ ton of copper ore per fathom.—Richards's Shaft: In the 210, driving west, the lode is 4 ft. wide, yielding 1½ ton of copper ore per fathom. Richards's shaftmen are now bed-planking the shaft to this level, which will be completed in a few days. In the winze sinking below the 200, west of shaft, the lode is 4 ft. wide, producing 1 ton of copper ore per fathom. In the 200, driving west, the lode is 4 ft. wide, yielding 2 tons of copper ore per fathom. This is a very promising lode, and looks very favourable for the western part of the mines. There are employed this week on tutwork 164 men and boys; on tribute, 80; at surface, 56: total, 300.

CWM DWYFOR.—J. Jewell, Oct. 29: The part of the lode that is being carried in No. 1 level, driving east of the north cross-cut, produces good stones of copper ore, sulphur, &c.; price for driving, 12*l.* per fathom. The lode in No. 1 level, driving east of the south cross-cut, is composed of lead, copper ore, chloride, quartz, &c.; price for driving, 14*l.* per fathom. Judging from the nature of the rock, we are in proximity to the slide which can be seen in the western end of the open cutting on this lode. The lode in the stope on the south lode will produce fully 1 ton of lead ore per fathom; price for stoping, 5*l.* per fathom.

CWM ELAN.—W. Goldsworthy, Oct. 24: The lode in the 20 west is looking very promising for a change for the better; at present it will produce 20 cwts. of lead and blende ores per fathom. The lode at same level east is divided by a joint running across the end at right angles. Cannot say much about it now, as it is just cut into.

DE BROKE.—T. Hodge and Son, Oct. 26: Fair progress is at present being made in Wilson's shaft, with a staff of four men; we are in want of five men to keep the shaft in full swing; we hope to get more in a few days. The rise in the back of the 25 continues to yield lead as last reported. The stope east of No. 2 shaft is now worth 12 cwts. of lead per fathom. The stope west of said shaft will yield cwts. of lead per fathom. Dressing is going on regularly, and we sampled today 12 tons (computed), the produce of four weeks' working.

DENBIGHSHIRE CONSOLIDATED.—John Pryor, Oct. 29: In the 112 east the lode is still in the shale, but is showing a little ore; the ground being hard, our progress is slow, otherwise we should have been through before now. In the 112 west we have a very good lode, composed of splendid white limestone, spar, and some good lead ore. We are expecting this end to lead us into a valuable course of lead ore daily. In the sink below the 66 the lead fully maintains its value as last reported. We have lengthened very much on its course, and expect a large yield from this portion of the mine.—Junction Shaft: The men are working well, and getting down as fast as they can.—Dressing-Floor: The men are busy preparing lead for the market. We shall be winding some very good stuff for the floor tomorrow and Saturday.

DYLIFFE.—Edward Evans: Dyliffe Lode: The 120 cross-cut is driven with all dispatch, in order to cut the lode as early as possible. The 60 end, east of boundary shaft, is improving a little in going eastward. In the 40, east of boundary shaft, we are stripping down the side and stoping the back; lode worth about 7*l.* per fathom. The 15, east of old engine-shaft, is still unproductive.—Esgirgaled Lode: In the 45, west of cross-cut, we are stoping the back, by six men; the lode is improving as we are going up towards the winze sunk on the bottom of the 35 above.

EAST CHIVERTON.—R. Southey, Oct. 28: The lode in the 64 west much the same as last reported. The stope in the back, just behind the end, has improved, and drained the water from the level above. The ground in the 64 cross-cut continues very favourable for driving, and good progress is being made. In the 52 east the ground has become much harder, which is a change we consider most desirable for the production of lead. Since the alteration in the ground the lode has increased to 4½ ft. wide; composed of mundic, with spots of blende and copper, also containing more quartz than I have seen before; so that it has every appearance we are on the eve of cutting lead. As the change is of recent date I shall be able to report more fully next week. Last Thursday we stopped the engine to cleanse the boiler; whilst this was going on we fixed a larger pole at the 40, so that we are quite prepared for any increase of water during the winter. This being completed, the engine was put to work again on Saturday, and the mine drained to the bottom by Monday morning, and the men resumed their several duties underground as usual.

EAST VAN.—Wm. Williams, Oct. 27: We are still pushing on the 25 west towards Van, but as yet have met with nothing worth valuing. When we have driven another 10 fms. we shall again come north to prove the lode.

EAST WHEAL BASSET.—R. Pryor and Son, E. Adams, Oct. 28: The lode in the stopes in back of the 50 fm. level, east and west of winze, continues to be worth 60*l.* per fathom. We have drawn to surface another splendid pile of copper ore. The men are making good progress in clearing and timbering the south shaft below the adit level. The driving of the 50 cross-cut south is being pushed on with all possible speed, and no time will be lost in reaching the new south lode. No other change to notice during the past week.

EAST WHEAL GRENVILLE.—E. Hosking, W. Bennetts, Oct. 29: In the 120 cross-cut north we have intersected another branch, and the ground continues favourable for driving. The lode in the 110 east presents a more kindly appearance. There is a branch in the south side which we think will shortly fall in with the lode, when we expect an improvement. No change in any other point.

FLORENCE CONSOLS.—P. Skewis, J. Searle, R. Skewis, Oct. 26: Setting Report: Walter's Engine-Shaft: This shaft has been sunk 9 ft. since we dropped our new lift, and we have good easy ground in the shaft so far, so much so that we shall make good progress in sinking this month; this shaft is now down from 5 to 6 fathoms from the 60. The 60 fm. level cross-cut, driving south-west from Walter's shaft, has been driven 43 fms., in which we have intersected several lodes, some of which are producing good tinstuff, and we are daily expecting to meet with another lode as it has every appearance of it now; we are driving this end by six men, at 3*l.* per fathom; we have had good easy ground the last month, but at present the ground has changed, and is much harder with branches of spar crossing the end (a good indication for another lode. The 60, driving west on the Georgin lode, by two men, at 40*s.* per fathom; this lode is 2 ft. big—saving work. The 60, driving east and west on the Fisher's lode east, by two men, at 30*s.* per fathom; west by two men, at 22*s.* 6*d.* per fathom; this lode looks very promising, and is a tinny lode.—Eliza's: We have this week made a beginning to prepare to sink this shaft from the 76 down to the 86. Our shaftmen are now busy employed fixing the plat sollar, &c., after which they will commence to sink with a full staff of men, and shall push on the sinking of this with all possible speed. In the 76 we have two men driving on a branch on the south side of the Millpool Standard lode at 40*s.* per fathom; this branch has yielded some good work for tin, but at present it is not so good, still we are saving some good work from this place; this is a new thing altogether, and as been very productive as far as we have driven on it; we might if the air had been better have been able to set on several more hands to work at this level, but the air is very dead. We hope this week we shall hole the piece of ground from the 66 down to the 76, which is about 3 fms. more to sink, after which we shall have sufficient air, so that we shall then at once start on more hands to break tin; this I hope will not be long before it is accomplished, as we have six able men employed about it at 3*l.* per fathom. In the 66 we have nine men stoping tke bottom at 6*s.* 6*d.* per ton; this is good work, lode from 12 ft. to 14 ft. big—all saving work. We broke from this place last month 70 tons of tinstuff by six men, and I have set on three more with this pare, which is nine men; here we hope to break a large quantity of stuff. The 66, east on the Fisher's lode, we have two men driving at 10*s.* in 1*l.* tribute, and 15*s.* per fathom; the lode here is subject to changes, and have had some very good work, but it is not so good in the present end; we have some good backs and bottoms standing yet to take away. The 60, driving west on the Millpool Standard lode, is still unproductive, but is letting out water freely; I did intend to stop this end for a little while, but I find that a great change took place during the last few days, so much so that it has enticed me to drain it further, for I think we must be very near the copper lode which is known to traverse this place; we are driving it by two men, at 40*s.* per fathom. The cross-cut south of this end we have stopped for awhile, as I think it useless to drain the two ends being so very near each other, and the lode is very small. The 60 fm. level end, east on the Millpool Standard, is also idle; I have taken the men to stope the back coming behind the end above mentioned, as we broke some good tinstuff from this place some time since; this is set to four men, at 5*s.* 6*d.* per ton. In the 40 fm. level cross-cut driven north we have intersected the lode, which is from 8 in. to 1 ft. big, and is a very kindly lode, and carries some good work for tin; this is the same lode that was worked on at the Great Western Mine, which was so very productive for tin, and which we can soon intersect at the 60, and from Walter's shaft, though we cannot tell much of its value as yet, as we have not opened much on it, but so far it is very promising. In the 20, on the Fisher's lode, we have three men stoping the back at 27*s.* 6*d.* per fathom; here we can break a large quantity of work, but of a low quality, nevertheless it will pay to take away. At the Trevair Mine we have the following bargains at work—The 30 fm. level end driving west by two men, at 40*s.* per fathom, and is a tinny lode. Sinking a winze in the 30 by two men, at 3*l.* 10*s.* per fathom; here the lode is hard, but we have taken out some very good stones of tin from this place. We have two men driving through a piece of ground to hole to the level above for ventilation, and also after we hole this piece of ground we hope to be able to take away some good tinstuff by tributors. We have one tribute pitch in this mine at 13*s.* 4*d.* in 1*l.* by three men, at a standard of 50*l.* per ton.—Chiverton Mine: We have three pares of men working, driving an end east by two men and two boys, at 30*s.* per fathom—a very promising lode. Driving west by two men, at 30*s.* per fathom. Stoping the back of the same by one man, at 35*s.* per fathom. We have taken out some good average work from this mine, although being so very shallow only 15 fathoms, but we hope shortly to be in a position to drain this mine free from water down to the adit level, which is the 40 from surface; this can be done with very little expense, and will be leaving from 20 to 30 fathoms of backs to take away, which I think will prove to be productive. We have in the Florence Mine five tribute pitches at 15*s.*, 13*s.* 4*d.*, and 10*s.* in 1*l.* All other works are progressing favourably. Machinery is in good working order.

FRANK MILLS.—James Rowe, N. Addems, Oct. 27: Setting Report: The 130, to clear and secure, south of the engine-shaft, by six men; we find this level has not been driven on the western lode. We have about 3 fms. more to clear to get to the end; we shall then put the men to drive east to intersect the lode, which by the dialling is about 3 fms. from the present level. The 115, to drive south of the engine-shaft, on west lode, by six men, at 5*l.* per fm.; lode producing 10 cwts. of lead ore per fm. A winze to sink in bottom of the 115, south of engine-shaft, by six men, at 6*l.* per fathom; lode producing 15 cwts. of ore per fathom. Stope in back of the 115, south of cross cut, on western branch, by four men, at 1*l.* 15*s.* per fathom; lode producing 4 cwts. of lead ore per fathom. The 84, to drive north of cross-cut, on west lode, by six men, at 3*l.* 10*s.* per fathom; lode producing 5 cwts. of lead ore per fathom. Rise in back of the 60, south of Orchard air shaft, by six men, at 8*l.* 10*s.* per fathom; lode producing saving work for lead. The 45, to drive south of No. 1 cross-cut, south of Orchard air shaft, by four men, at 4*l.* 15*s.* per fathom; lode producing 5 cwts. of lead ore per fathom. Rise in back of the 45, south of No. 1 cross-cut, by six men, at 7*l.* per fathom; lode producing 6 cwts. of lead ore per fathom. The 45, to drive north of No. 2 cross-cut, south of Orchard air shaft, by four men, at 4*l.* 5*s.* per fathom; lode producing 4 cwts. of lead ore per fathom. Our tribute department is looking just the same as for some time past. Our machinery is in good working order.

FRON VELLAN.—Capt. Harper, Oct. 28: The cross cut driving south of shaft we have driven through the lode, which is from 4 to 5 ft. wide, at present unproductive, therefore we have discontinued operations here for the present. The stope in the roof of the level west of deep adit, on the north part of the lode, is worth at present 25 cwts. per fathom. We find that the cross-point which we met with in driving this part of the level, and which disordered the lode so much, goes right through the north wall. The men are at present clearing out their stuff. I should recommend the driving of the cross-cut north here, to intersect the north lode.

FURZE HILL.—W. Doidge, Oct. 29: No. 1 North Lode: There is no change in the midway level, east of Bell's shaft, since my report for the meeting. We are still clearing and securing the ancients' level on the cross-course, which is very much larger than any ever seen in the western part of the mine. The stopes in the back of this (the midway) level are still worth from 10*l.* to 22*l.* per fathom. The stope in the back of the 54 is worth 3*l.* per fathom.—Middle Lode: There is no change in the 40 and 54 ends driving west; the average value of the stopes on this lode is about 5*l.* 10*s.* per fathom. Our last parcel of tin weighed 4 tons 2 cwts. 1 qr. 21 lbs., at 58*l.* per ton, which leaves a small profit on the four weeks' working. It is of the utmost importance that the shareholders should apply for the unallotted shares at once, which would enable us to explore the mine eastward. Open up the side lodes and develope the mine in depth much more expeditiously than we can under present circumstances, and which no doubt would result in opening a lasting and profitable mine.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., Oct. 24: We are pushing on the drivages both east and west of King's engine-shaft at the 117; the ground continues of the same description, and our progress very satisfactory. The lode in the stopes in the back of the 95 is worth 7*l.* per fathom. The lode in the stopes in the bottom of the 82 is worth 12*l.* per fathom. The lode in the stopes in the back of the 70 is worth 15*l.* per fathom. All other points are without change.

GORSEDD AND CELYN LEVEL.—Wm. Edwards, Oct. 29: Coetia Gelynen Shaft: In No. 1 sump we are driving a level 20 yards deep, in order to get under the run of lead ore above; the ground is at present rather hard, but seems likely to take a change very soon. At No. 2 sump we have been raising some splendid ore since the last report, and in ground of a highly promising character. There is no change in the adit north to the Merllyn lode; the water still issues from the forebreast, showing that the lode must be ahead. We are getting on well towards preparing a parcel of lead for sale at the ticketing.

GREAT RETALLACK.—J. Harris, Oct. 24: The lode in the 40 east is producing good patches of blende, about 5 cwts. to the fathom. I am hoping the lode will improve again shortly, as it has been reported to me a good lode has gone below the 30, a few fathoms ahead of our present end, it being left by the former workers in consequence of the influx of water. The men are making good progress with the driving.

GUNNISLAKE (Clitters).—William Skewis, J. C. Seccombe, Oct. 27: In the cross-cut north at the 176 the ground is making harder. The lode in the 164 east is disordered, and poor for the time. In this level west the lode is worth 8*l.* per fathom. The lode in the rise in back of this level is worth 12*l.* per fathom. The stopes in back of the 164, east of engine-shaft, are worth as follow:—No. 1, 20*l.*, and No. 2, 15*l.* per fathom. The stope in bottom of the 140, east of engine-shaft, is worth 7*l.* per fathom. The lode in the 140, west of engine-shaft, is worth 9*l.* per fathom. The stopes in back of this level are worth 11*l.* and 12*l.* per fathom. The lode in the 128 west is looking very promising, and produces saving work for copper ore. In the 116 west the lode is heaved north by a cross-course, and we are driving to intersect it. No other change in the mine to notice.

HINGSTON DOWN CONSOLS.—James Richards, Oct. 29: Bailey's Shaft: In the 150 west but little has been done, owing to a breakage of the engine-shaft-rod. There is still a little water in, but driving will be resumed on Friday if all goes well. We have commenced to drive the 150 east from the bottom of Cocking's winze, on the north part of the lode, which is 4 ft. wide, and worth 10*l.* per fathom. In the rise in the back of the 140 west fair progress continues to be made by the side of the lode. The lode in the three stopes in the back of the 140 west is 4 feet wide, and worth on an average 25*l.* per fathom. In the 120 west the lode is without change in character; it is 3 ft. wide, composed of capel, quartz, peach, mundic, and a little rich ore. In the stope in the bottom of the 120 west the lode is 4 feet wide, and worth 20*l.* per fathom. In the winze sinking below the 110 west the lode is 3 ft. wide, consisting of capel, quartz, peach, mundic, and ore, worth 15*l.* per fathom. In the 110 west the lode is still very promising, and is worth all of 20*l.* per fathom. The lode in the stope in the back of the 110 west is worth 12*l.* per fm.

ILLOGAN.—Richard Pryor and Son, Oct. 27: The men engaged in driving the deep adit cross-cut south are making fair progress, and the ground is highly mineralised in its nature. On the copper lode there has been no change to report since our last.

KINGSTON VALLEY.—G. F. Richards, Oct. 29: The lode in the 18 west is very large, producing fully 10 cwts. of silver-lead, besides a large quantity of blende ores, per fathom, with very strong indications of continuance and increase of value. The rise in the back of the same level still continues to yield 1 ton of silver lead, in addition to several tons of blende ores, per fathom, with every promise of continuance. At both these points the lode still carries a large proportion of carbonate of lead, which is a very excellent feature, and altogether the prospects of the mine are exceedingly good.

LADY CONSTANCE.—Oct. 29: In Katie's shaft I have had a cross cut driven north from the end of the western level for 4 yards, and found the ground contains a little ore, the same as further back. I have now put the men to drive on west again. In old shaft the ground in the cross-cut continues middling favourable for driving, and, from the appearances to-day, I think we shall soon meet with ore ground the same as in Katie's shaft.

LADYWELL.—Arthur Waters, Oct. 29: We keep moving here as usual, and everything goes on under fair prospects. Full report and setting list next week.

NANT-Y-RONAN CONSOLS.—Richard Couch, Oct. 26: In the eastern adit the water is increasing in the forebreast of the end, and the killas is now a light blue of a very congenial character. We have driven about 2 ft. on the south lode, east of western cross-cut. The lode is now 1 ft. wide, of flookan, containing small veins of quartz, with some spots of lead; ground easy. We have blasted a few holes in the north lode, east of western cross-cut. Here the lode is 3 ft. wide, producing some good specimens of lead, and as the two lodes will form a junction a little east of No. 1 shaft, our future prospects are very encouraging in this part of the mines. We have cut down the bottom of the No. 1 shaft, and brought it in line with the winze. We have placed the engine in its proper place, and shall now soon begin to sink in a course of lead. The smiths' shop is nearly complete. I shall use all the economy in my power for the benefit of my employers, and my firm belief is that we shall have a good dividend-paying property.

NEW CONSOLS.—Richard Pryor, Thomas Jenkin, Henry Vial, Oct. 27: We see no particular change to notice in the sinking of Phillips's engine-shaft since our last report. The 86, west of engine-shaft, is letting out considerably more water as we drive north, which induces us to think that the main part of the lode is in that direction. This level driving east of shaft continues without change. At Broadgate we have fixed the defend-off bob, and have hung the main-rods. The men are now engaged putting in stays and doing other necessaries, preparatory to setting the engine to work. At surface everything progresses satisfactorily.

NEW HENDRA.—W. Rowe, Oct. 24: The deep adit end is set to drive by six men, for the month, at 8*l.* per fathom. No alteration in the lode since our last report.

NEW ROSEWARNE.—E. Hosking, Wm. Bennetts, Oct. 24: Setting Report: The 67 to drive west of Pool's shaft, by six men, at 11*l.* per fathom; the lode is large, and produces a little tin. To rise above the 58, west of Pool's shaft, by four men, at 7*l.* 10*s.* per fathom; the lode is 3 ft. wide, with a leader of copper ore worth 8*l.* per fathom. To sink below the 46, west of Pool's shaft, by four men, at 8*l.* per fathom; the lode is producing saving work for tin and stones of copper ore. We have also set six pitches to 21 men, at an average tribute of 12*s.* 3*d.* in 1*l.*, the tributers to be paid at the rate of 50*l.* per ton for black tin.

NORTH HENDRE.—J. Lean, Oct. 28: No particular change calling for remark has taken place in the mine since last report, the various points of operation being up to the value then given, and are being pushed on with vigour.

NORTH LAXEY.—R. Rowe, Oct. 27: I was at the mine and underground on Wednesday last. Our chief interest at present is in the driving of the 84 north, having for its object the proof as to whether the ore ground now opening out in the 110 is new and independent of anything else seen in the mine; to a considerable extent this is now being confirmed. Since my last report we have had a lode in the 84, and worth close upon 2 tons of lead per fathom; but on Wednesday it had fallen off, owing to disordered ground crossing the end, but there is still a small rib of lead in the lode going a-head. The lode in the 110 end is now about 1½ ft. wide, worth from ½ to 1 ton of lead per fathom. In the 121 driving north the lode is almost 2 ft. wide, yielding some saving stuff for blende and lead. The stopes in the roofs of the 110 and 60 fm. levels are looking much as usual, and turning out good leadstuff. After this month I intend to start a fresh stope in the roof of the 110 in the new run of ore ground. I regret to say that the 60 south still keeps poor, and the ground is now very hard. The north part of the mine, however, presents, on the whole, a good prospect, and should the 121 open out well our success will be near.

— Oct. 29: Telegram: Now returned from North Laxey. Nothing specially new since my report; 80 north improving.

NORTH POOL.—W. C. Vivian, F. Clymo, Oct. 29: We have to report very favourable appearances in the 40 cross-cut, the country being thickly impregnated with copper, blende, and mundic, and there being on the surface of the cleavages much green sublimated salt of copper. The distance now driven in the cross cut, and laid down on the plan, shows about 9 ft. more to drive to reach the line of the lode, as shown in the old workings. This we think we may get through by the end of our working month (Nov. 9), which is our measuring and setting day.

NORTH TRELEIGH WOOD.—J. Pope, Oct. 23: I find the deep adit level is driven about 15 fms. west of footway shaft; the lode varies in size in places; it is from 2 to 2½ ft. wide, producing blende, copper ore and tin, &c.—a kindly-looking lode. The lode in the present end is from 10 to 12 in. wide, composed of quartz, capel, and a little copper ore. I think, with a little more depth, your chances for success to be very good.

NORTH TRESKERBY.—Richard Pryor and Son, Oct. 27: In the driving of the deep adit cross-cut, north of new shaft, we are meeting with increased quantities of water, as well as a most kindly channel of ground. The tributers, both on the tin and copper lodes, are breaking some very good piles of ore, and they are earning fair wages.

OLD BATHOLES.—A. Waters, Oct. 29: In the shaft sinking from surface, on the top of the mountain, the lode is 3 ft. wide, composed of solid stones of galena, a fair quantity of carbonate of lead, with a tough whitish clay, characteristic of the Shropshire lead lodes, on the surface. This is a very promising trial, and we are very hopeful about it.

OLD BOTTLE HILL.—R. Unsworth, Oct. 28: In the 46, east of Rowe's shaft, on Bucking-house lode, the lode is 15 in. wide, producing good saving work for copper. In the winze in bottom of the 36, east of Rowe's shaft, no lode has been taken down; the lode when last taken down was 18 in. wide, producing grey and yellow copper ores, intermixed with malleable copper—a very promising lode. No change in tribute pitches.

OLD TINCROFT.—J. Pope, Oct. 28: In the 30, west of Diamond shaft, the lode is 18 in. wide, producing good tinstone. In the 10, west of Diamond's lode, it is 2 ft. wide, producing tinstone of average quality. In the adit east on the south lode, the lode is 6 in. wide, producing saving work for tin, and looking promising for improvement.

OLD TREBURGETT.—W. Hancock, W. T. Bryant, Oct. 28: The lode in the 90, south of engine-shaft, is worth about 5*l.* per fathom. At the 90 north we are driving by the side of the lode for speed; we shall take it down some time next week. The 80, south of shaft, is worth 8*l.* per fathom, a very strong kindly lode. In the 70 south the lode has a very promising appearance, though at present worth about 4*l.* The same level north is worth 11*l.* per fathom. The 60 south is communicated with the winze below the 50. The men are now engaged stripping down the lode, worth about 6*l.* per fathom. When completed we shall drive on the end again. There is nothing particular new to call for remark in the stopes or in the cross-cuts east and west of the 60. We sampled to-day two parcels of lead ore, No. 1, computed, 30 tons, and No. 2, 6 tons, for sale on the 5th prox.

PARYS MOUNTAIN.—T. Mitchell, Oct. 29: The operations at the mines are going on with the usual regularity. The stoping department continues to look much the same. The tribute pitches are, upon the whole, looking better. Saturday next will be our setting-day, when a full report shall be forwarded.

PEDN-AN-DREA UNITED.—Wm. Tregay, Wm. Prideaux, J. Pope, Oct. 24: Sump: In the 160 north we purpose next week commencing to drive west on one of the branchess intersected. The chances are that there may be one of the branches of the cross-course west of the present drivage. In the 150 west end the lode (Martin's) is worth 25*l.* per fathom. In the 140 fm. level east winze the lode (Martin's) is worth 30*l.* per fathom. In the 140 west end the lode (Martin's) is worth 14*l.* per fm. In the 130 west end the lode (Martin's) is worth 9*l.* per fathom.—Cobbler's: In the 120 west end the lode (Martin's) is worth 10*l.* per fathom.—Cardozo's: In the 90 west end the lode (north) is worth 15*l.* per fathom. In the 80 west end the lode (north) is worth 10*l.* per fathom. In the 70 west end the lode (north) is worth 16*l.* per fathom. In the 60 west end the lode (north) is worth 20*l.* per fathom. In the 55 west end the lode (north) is worth 12*l.* per fathom. In the 47 west end the lode (north) is worth 6*l.* per fathom.—Trevena's: In the 47 east the branches (carbona) are worth 8*l.* per fm.—Critchley's: In sinking below the 30 level good progess is being made. In the 90 rise the ground is favourable, and we are raising at a pretty good rate. In the 140 cross-cut we are making good progress. No other changes to report. We sold at Carvedras 17 tons 19 cwts. 2 qrs. 18 lbs. of black tin on the 17th inst., at 58*l.* 2*s.* 6*d.* per ton, realising 1045*l.* 5*s.* 3*d.*

PENNERLEY.—W. T. Harris, J. Delbridge, Oct. 28: Engine-Shaft: The lode in the 130, driving west, is without change, being 6 in. wide, carbonate of lime. There is a long piece of unexplored ground before us, and we are looking for an improvement as the end advances. The lode in the 120 end is still twitched and unproductive. There is a strong lode gone down in the bottom of the level above, which we must certainly meet with in this end before long; we then expect some good ore. The 100, driving west, on the east and west lode, is yielding 1½ ton of lead per fathom. This level west, on Big Ore lode, is producing ½ ton of lead per fathom, and very promising. The 80, clearing east, has been extended 25 fms. this level has never been cleared to the forebreast by the present company. Our purpose is now to make the level secure, and push forward the end, expecting to discover other lodes eastward. The lode in the 70 east is 2 ft. wide, worth 3 tons lead per fathom. The lode in the 40, driving west, on north lode, is worth 2 tons of lead per fathom. We are opening out some nice ground for stoping both in the back and bottom of this level. In the 25 east the lode is 1 ft. wide, producing lead. Judging from what has been done in the upper levels we should now be into some more productive ground. We are daily expecting a change for the better. The lode in the winze sinking below this level is worth 2 tons of lead per fathom.—Potter's Pit: The cross-cut driving north at the 65 is now within 9 ft. of cutting the lode, which we hope to hole to the winze sunk from the level above in a week from date. The ground is much more favourable for progress, and the end being the required depth we shall operate upon it from both ways—*i.e.*, the cross-cut and winze. The lode in the 55 west is at present small, but indications favourable for a change. No. 2 winze, sinking below this level, is down 6 ft.; the lode is 1½ ft. wide, worth 1½ ton of lead per fathom. At the 45, on caunter lode, the rise in the back is producing 10 cwts. of lead per fathom, and very promising. The rise in the back of the 35 is yielding 2 tons of lead per fathom. The stope being east, has much improved, now worth 1½ ton of lead per fathom. The stopes continue to yield good quantities of lead, and prospects just the same as for some time past. The 80 tons of lead sold to-day realised 14*l.* 6*s.* per ton.

PERSEVERANCE.—Wm. Rich, W. Hambly, Oct. 27: Good progress is being made in sinking the engine shaft below the 60, by twelve men. The lode in the end west carries a little tin, and is being driven at 3*l.* 5*s.* per fathom. In the

skip-shaft, on Whitford's tin lode, on the south part of the mine, the shaft is only about 9 feet below the adit level; the lode looks very promising for the depth, and is worth 5*l.* per fathom for tin.

QUEEN'S (Silver-Lead).—E. Evans, Oct. 28: The lode below the 140 yard level, east of Gladstone's shaft, continues strong, good for progress, and yielding stones of lead ore. The lode in the 120 yard level, east of Gladstone's shaft, is 4 ft. wide, and of good appearance, more likely for lead than ever I have seen it. The 80 yard level (Milwr lode), east of Gladstone's shaft, is good for progress, the ground being composed of limestone, spar, clay, and lead. The roof of the 80 yard level is looking very well, and yielding lead daily. We have repaired the footway to the east end of the mine (Seven Stars lode) to the depth of about 45 yards, and I have put the men to drive a cross-cut to prove the width of Pant-y-ne, before commencing to drive north on the lode; it appears a very good ground, getting lead daily; there is a road here to go to another level 15 yards deeper, and to the forebreast of the level (west) the lode is rather hard, but I expect a change shortly.

RHEIDOL.—John Ridge, Oct. 24: Alltddu engine-shaft, to sink below the 20, by six men, at 12*l.* 15*s.* per fathom. In the past month we have completed cutting ground for plat, cistern, &c., put in penthouse, and sunk shaft 1 fm. 4 ft. 6 in. below the 20; the ground appears more congenial for mineral, and is getting much stronger. The 10 has been driven west of the shaft about 17 fms. in a strong and kindly lode, varying from 4 to 7 ft. wide, which has yielded a little ore for the whole distance. In the present end the part of the lode carried (5 ft.) is composed of slate-spar, carbonate of lime, and a good strong mixture of lead and blende, and strings of copper; on the whole, a very promising lode. Looking at the improved character of the lode and the rock, there can be no doubt but that this section of it will be found productive when driven under from the 30. The end is now as far in as the winze, but as the ore dips west we may have a little further to drive before intersecting the ore. After driving 6 or 9 ft. further, I purpose cross-cutting the lode to its full width.

ROMAN GRAVELS.—Arthur Waters, Oct. 29: The 95, north of shaft, is opening out profitable ore ground; and the same level, going south of No. 2 winze, is laying open rich stoping ground. The stopes in this level are yielding their usual quantities of ore. The 80, south of Corfield's, has lately been in a lode 15 ft. wide, but the vein is now narrowed up to 8 ft., and is beginning to show a rich course of ore again. The stopes in this level are yielding ore in large quantities. The 65, south of Stokes's winze, is in a wide, strong lode, worth 60*l.* per fathom. The stopes in the roof of the level are improving as they are being worked southwards. We are uncovering a splendid course of lead (to be seen) along the bottom of the said 65 fathom level.

SOUTH BWADRAIN.—Sydney Roberts, Oct. 28: I have to inform you that we have completed the erection of our new 30-ft. water-wheel, erected launders, and brought the water into it for working the same. We have also completed the necessary buildings for receiving the drawing-machine, which is now delivered on the mine, and ready to be placed in its proper position. We have also cut the required ground for the working of the line of rods from the wheel to the engine-shaft, and have also completed the timbering and collaring up of the engine-shaft at surface. The ladder-road is also fixed from the adit to the 12, and the shaft properly cased and divided, and we now only require the machinery ordered and paid for from the Bank House Foundry—pump rods and pulleys—to put all matters perfectly straight, and the mine into a good position in every respect for carrying on the working with vigour and dispatch. The 12 has been driven on west about 2 fms., and the part of the lode which has been carried yields about 1 ton of very rich blende ore and some good lead ore per lineal fathom. The eastern end has been driven about 9 ft.: here the lode is standing to the south. I have now placed the shaftmen to strip down the lode to its full width in each of these places, and from present appearances I have no doubt in a few days I shall be able to report most satisfactorily on both these bargains. In conclusion, I have only to add that it is the opinion of the most experienced agents in this county, the miners, and my own, that taking into consideration the character of the lode generally, coupled with the shallowness of the present development, that we shall at no distant date lay open one of the best mines that this rich county has produced.

SOUTH PRINCE PATRICK.—J. Jones, Oct. 28: The ground in the northern shaft is very hard for sinking at present, but we may expect a change for the better shortly as we are not far from the carbonic limestone. In the north driving, on Parry's lode, we continue to raise very good lead, and I expect to reach our highest number of tons at the next sale. The washing is being carried on with all diligence.

SOUTH ROMAN GRAVELS.—J. W. Powning, Oct. 28: Shelfield: We got the mine in fork by Saturday last, and find that the portable engine can keep the water at 15 strokes per minute in the shaft, which shows the water to have fallen off considerably since February last, when we had to run 25 strokes to keep the feed. I account for the difference in our having had an unusual dry summer, and in having let down a house or pool of water, which was evidently above our bottom levels. I feel disappointed in not being able to start the new pumping-engine this week, as expected; we are deficient of a short piece of steam-pipe and two or three other small castings, which were ordered just three weeks since, but which have not yet come: I am instructed, however, that they will be sent on either today or to-morrow, and will most likely be here on Saturday, when we will connect them and get the engines to work next week. We have filled the boiler, and put in fire to dry the flues, chimney, &c., preparatory to starting the engine. The masons have completed the buildings, with the exception of pointing the walls and plastering, which we think it is advisable to leave until we get more suitable weather.

SOUTH ROSKEAR.—John Brenton, James Hosking, Oct. 24: Dunkin's Shaft: We have dropped the pitwork 6 fms. below the 90, and hope by Tuesday next to have drained the water to that point. We have cleared the 90, east of this shaft, for a distance of 40 fms. At this point the level is blocked by a broken-down stull, the stullstuff from which will produce 40 lbs. of black tin per ton, and corresponds with the stullstuff found in the level above.—Old Engine Shaft: The ladder-road is fixed from the 80 to the 90.—Vivian's Shaft: We are clearing the choke in this shaft at the 60 with all speed, and when it is done we shall commence to draw to surface some of the tinstuff found at the 80 and 90 fm. levels. The pitches are without alteration since our report of last week.

SOUTH WHEAL FRANCES.—A. T. James, J. James, J. Opie, Oct. 24: We beg to send you the following setting report:—Pascoe's shaft is now about 2 fms. below the 175, and is being sunk, by nine men, at 20*l.* per fathom; the lode is 5 ft. wide, producing a little tin, but not enough to value. The shaftmen will very shortly commence to fix plunger bottom, and bring down the main rods to this level. The 134 cross-cut, to three men and three boys, at 10*l.* 10*s.* per fathom. This cross-cut is now driven about 13 fms. south from where it was started, the ground is easier for driving, and we are daily expecting to cut the new tin lode. The 124, west of cross-cut, to six men, at 12*l.* per fm.; the lode is 5 ft. wide, worth 15*l.* per fathom, and presents a more promising appearance. The 124, east of cross cut is suspended, and the men put to sink in the bottom, at 15*l.* per fathom, with a view of communicating this level with the 134 as quickly as possible, for ventilation. The 124 stope, east of rise, to nine men, at 6*s.* 6*d.* per ton; the lode is 5 ft. wide, worth 12*l.* per fathom. The 124 stope, west of rise, to nine men, at 6*s.* 6*d.* per ton; the lode is 5 ft. wide, worth 15*l.* per fathom. The 104 stope, east of pass, to nine men, at 6*s.* 6*d.* per ton; the lode is 6 ft. wide, worth 12*l.* per fathom. We have also let six tribute pitches, to 12 men, at tributes varying from 12*s.* to 13*s.* 4*d.* in 1*l.* Last Saturday we sold 9 tons 17 cwts. 0 qrs. 14 lbs. of tin, at 58*l.* per ton, and hope to sell another parcel this day fortnight.

ST. AGNES CONSOLS.—J. and Wm. Vivian, Oct. 28: We have nothing very particular to communicate at present. The 72 cross-cut, south from Reynold's engine-shaft, is now in 4½ fms.; ground very wet and hard, however we hope to find the lode very shortly, which we expect is moved out of its direction by a fault in the country rock. We have opened north of the shaft on the great mundic lode; lode about 8 ft., and find it underlying very flat towards Wheal Rock lode, at the intersection of which we have every reason to expect a good course of tin, similar to what the old workers had on the other side of the valley in Wheal Kitty. The underlie of the mundic lode is so rapid that we have thought it wise to sink the engine-shaft about 6 ft. deeper, and stope the cross-cut north to the lode, so as to give room for fixing work to sink on the underlie.

ST. DAVID'S.—J. Jones, Oct. 28: The three men repairing Jones's shaft are getting on as fast as possible; they are now down about 30 yards. It gives me great pleasure to inform you that the ore at Edward's shaft is very much improved. There is a solid rib of lead about the width of a hand going from the top of the drift to the bottom, and going up in the roof and down through the floor as well. It promises to widen as we drive to the south, and there is also a very rich ore ground on the heading side. The new washing-floors have been so far prepared that we are going to cart down stuff there to-morrow. I shall be in a better position to inform you in my next report of the quantity I shall be able to put on sale at the next ticketing.

ST. JUST AMALGAMATED.—Richard Pryor and Son, Wm. Bawden, Thomas Richards, Oct. 26: Saveall's engine-shaft, sinking below the 120, is without change since last report. The shaftmen have completed fixing the pitwork, so that henceforth we hope to conduct the sinking of this shaft without hindrances. The lode in the 120, driving west of engine-shaft, has certainly improved in appearance since last week, from which we are led to believe that a good lode of tin will be soon met with at this point. In the remainder of our tutwork bargains we have no change to remark, and our tribute department is just as it has been for some time past. The whole of the machinery throughout the mine is in fair working order.

ST. LAWRENCE.—Oct. 29: The lode in the 52 yard level, east of new shaft, has improved since my last report, and is now about 1 yard wide, of clay, spar, &c.—a very promising lode. The ground is a little more favourable for driving. The lode in the level driving west of the swallow has improved, and is now producing some nice lumps of ore.

TANKERVILLE.—Arthur Waters, Oct. 29: The lode in the 152 fathom level west of Watson's shaft, is 6 ft. wide, and improved for lead since last week. We shall soon be into rich ground here. The 140, west of shaft, continues to open out a strong profitable course of ore. There is a course of ore in bottom of said 140, 7 to 8 ft. wide, and it must be met with in the 152. The stopes in the back of the 140 are looking well; we hope to hole the winze from the 130 to the said stopes some time next week. The 140 east is worth 2 tons per fathom. The 120, west on main lode, is worth 2 tons per fathom. The 120 west, on side lode is worth 1½ ton per fathom. Nothing new elsewhere since last report.

TRELEIGH WOOD.—E. Hosking, W. Goldsworthy, Oct. 23: We have to-day set the following bargains:—The 44 east, by four men, at 6*l.* per fathom; the lode, or part carrying, is 5 ft. wide, and yielding a little tin and good stones of copper ore. To stope the back and north side of the 44, west of the engine shaft, by nine men, at 8*s.* 6*d.* per ton; lode worth 16*l.* per fathom. To stope the back of the 44, west of engine-shaft and east of the rise, by four men, at 8*s.* per ton; lode worth 10*l.* per fathom. To stope the bottom of the 34, west of the engine-shaft, by four men, at 4*s.* 6*d.* per ton; lode worth 7*l.* per fathom. To stope the bottom of the 24, east of the engine-shaft, by three men, at 6*s.* per ton; lode worth 8*l.* per fathom. To stope the bottom of the 34, east of Uren's winze, by six men, at 5*s.* per ton; lode worth 18*l.* per fathom. To stope the 34, east end and breast of ground, east of the cross-course, by nine men, at 6*s.* per ton; lode worth 20*l.* per fathom. To stope the back of the 34, west of Harris's winze, by 10 men, at 5*s.* per ton; lode worth 12*l.* per fathom. To stope the bottom of the 24, east of Harris's winze, by three men, at 6*s.* per ton; lode worth 7*l.* per fathom. To stope the bottom of the 24, east of Windmill shaft, by three men, at 5*s.* 6*d.* per ton; lode worth 7*l.* per fathom. To drive a cross-cut south to intersect the south part of the lode, west of engine-shaft at the 34, by two men, at 9*l.* per fathom. The winzes being holed we have the levels well ventilated, and shall now have plenty of tinstuff, and increase our returns.

TREVARRACK.—J. Pope, Oct. 28: The engine shaft is 11 fms. below the 60; lode 5 ft. wide, producing stones of tin throughout. As the north lode and the lode sinking on has now formed a junction, we intend sinking 9 or 12 ft. deeper before cutting a plat, in order to prove what change this is likely to make. In the winze sinking below the 48 the lode is 2½ ft. wide, producing low-price tinstone. In the rise in the back of the 60 the lode is the same size and appearance as in the winze. This I expect to hole in a day or two.

TYLLWYD.—John Paull, Oct. 29: There is no material change in any of our operations during the past week. The lode in the south west level is yielding from 25 to 30 cwts. of lead ore per fathom. The 20, driving west of cross-cut, at engine-shaft, produces from 1 ton to 1 ton 5 cwts. per fathom; here the lode is a little wider than last week. Surface work all going well, and machinery in good order.

WEST ESGAIR LLE.—R. Harvey, Oct. 28: Fair progress is being made in driving the 34 cross-cut north towards the main part of the lode. There is no change in any of the underground operations in western mine. Dressing going on regularly.

WEST GODOLPHIN.—J. Pope, jun., Oct. 28: The lode in Pressure shaft, sinking below the 50, is 2½ ft. wide, worth for the length of the shaft about 35*l.* per fm. The lode in the 50, driving south-east of Pressure shaft, on the caunter lode, is 20 in. wide, worth about 6*l.* per fathom. The lode in the 50, driving east of the caunter, on Pink lode, is split in branches, producing a little tin, but not sufficient to value. The lode in the 50, driving west of the caunter, on Pink lode, is 15 in. wide, worth about 9*l.* per fathom. The lode in the 40, driving north-west of Pressure shaft, on the caunter lode, is 2 ft. wide, worth 7*l.* per fathom. We have communicated Vivian's shaft with the rise in the 20, just a small hole of sufficient size for a man to go through; this will be squared down the proper size for the shaft this week. The lode in the deep adit level, driving south-east of Vivian's shaft, is 18 in. wide, worth about 4*l.* per fathom. The lode in Wilson's shaft sinking from surface, is 9 ft. wide; the lode is not so good in quality as when it was smaller, worth for the length of the shaft about 16*l.* per fathom—a fine looking lode. I find by examining the south Hope lode in the deep adit level, which is a few fathoms north-west of Pressure shaft, that is the same character lode as that in Wilson's shaft, so I have put two men to remove a pile of stuff preparatory to driving on the course of this lode at the deep adit level. We are forced to suspend sinking the winze in the 50, south-east of Pressure shaft, also those tribute pitches that were set at 3*s.* 6*d.* in 1*l.* by reason of the water.

WEST MARIA AND FORTESCUE CONSOLS.—Wm. Skewis, Noah Coward, Oct. 29: West Maria Lode: The lode in the 104 west maintains its kindly appearance, and contains a little more mundic and copper ore, and still continues to let out a large quantity of water. The lode driven by the side of, in the 93 west, will be taken down by next reporting day. We shall then give you particulars of its size, appearance, &c. The stopes throughout the mine are without change.

WEST MILWR.—W. Francis, Oct. 28: The cross-cut south from West Meadow shaft has been carried on without interruption since last report, and the progress is satisfactory, without any change to note.

WEST TANKERVILLE.—A. Waters, Oct. 29: The south boundary shaft is being pushed below the 50 fm. level as fast as possible. The rise in the 50, south of shaft, is worth 2 tons of lead ore per fathom. The winze below the 40, south of shaft, is also worth 2 tons per fathom. The stope in the 40, south of old men's winze, is worth 2 tons of lead and 3 tons of blende per fathom. We have just cut into the No. 2 caunter lode in the above stopes, and so far as seen it is a strong vein, well charged with lead ore. We have over 10 tons of lead and 20 tons of blende dressed and put in the bin, the work of the last fortnight.

WEST WHEAL GORLAND.—J. Mayne, Oct. 29: The lode at the engine-shaft sinking below the 50 is worth 20*l.* per fathom. The lode in the bottoms, below the 30, 10 fms. west of shaft, is 8½ ft. wide, worth fully 80*l.* per fm. The stope in the back of this level is worth 8*l.* per fathom. The 30, driving west, shows a kindly appearance, and we are hoping by driving nearer to Chilcott's cross-course the lode will improve. In driving the 30 east we have commnicated to the bottoms, consequently all this part of the mine is now ventilated. The winze sinking in bottom of the 32, on the south lode, is worth 4*l.* per fathom; we have now some tribute ground laid open at this point. There is no other alteration to remark on. All the machinery on the mine is now in good order, and working well.

WHEAL CREBOR.—J. Andrews, Oct. 28: The lode in the 120 east is without change. The lode in the stope in the bottom of the 120 is 6 ft. wide, worth 12*l.* per fathom. The lode in the stope in back of the 120 is from 5 to 6 ft. wide, worth 30*l.* per fathom. I have taken the men from the 108 end east, and have put them to sink a winze down on the 120 back stope, and when communicated with the stope we shall be able to run attle down from the stull over, to keep abroad the north side of the stope, which is now very heavy, and in order to effect a communication as soon as possible I have put the 48 fm. level men to rise against the winze, and expect to effect a communication in about a fortnight, when the driving of the 108 end and the 48 stope will be resumed. In the 72 east we are driving by the side of the lode. The lode in the 48 east maintains its size and promising character, yielding good stones of ore, but at present not sufficient to value.

WHEAL GRENVILLE.—E. Hosking, W. Bennetts, Oct. 24: In the 160 cross-cut we have the lode all the height of the end, which is worth fully 30*l.* per fathom. The stope above the 150 is worth 15*l.* per fathom. The stope below the 140 is worth 12*l.* per fathom. The lode in the 140, east of cross-cut, is worth 10*l.* per fathom. The stope above the 140, east of cross-cut, is worth 15*l.* per fathom. The stope above the 140, east and west of winze, is worth 18*l.* per fathom. There is no change to notice in either of the 130 cross-cuts. Nothing has been done in the 130, east of north shaft, since our last, the men having been engaged putting in tramroad. The rise in the 120, east of north shaft, is worth 15*l.* per fathom. The stope above the 120 east is worth 6*l.* per fathom. The winze below the 110 east is worth 15*l.* per fathom.

WHEAL GRENVILLE.—E. Hosking, W. Bennetts, Oct. 29: The lode in the 160 cross-cut is opening out satisfactorily, and is worth fully 30*l.* per fathom. All other parts of the mine are much the same as last reported.

WHEAL KITTY (St. Agnes).—S. Davey, J. Williams, Oct. 24: New Shaft—Pryor's Lode: We have no change to report in this shaft, sinking below the 142. In the 142, driving west of shaft, the lode is presenting a better appearance as we get out of the influence of the gossan, and producing good stones of tin. In the 142 east, driving south of gossan, the ground is highly mineralised, and being pushed on as fast as possible. In the 142, driving north of shaft, on the caunter, the lode is worth for tin 10*l.* per fm. In the 130, driving west of shaft, the lode is worth for tin 10*l.* per fm. In the 130, driving east of shaft, the lode is disordered by the cross-course. In the 118, driving west of shaft, the lode is worth for tin 13*l.* per fm. In the 106, driving west of shaft, the lode is worth for tin 9*l.* per fm. We have communicated the winze sinking below the 106 with the 118, which has given good ventilation to both levels. The lode in the 20, driving east of shaft, is worth for tin 6*l.* per fathom. The lode in the north adit level, driving west of the eastern boundary, maintains a very promising appearance.

WHEAL LUCY.—Wm. Harris, Oct. 28: We sold two parcels of tinstone yesterday—No. 1 parcel produced 9 cwts. 2 qrs. 9 lbs. black tin to the ton of stuff; No. 2 parcel produced 1 cwt. 3 qrs. 14 lbs. black tin to the ton of stuff. Does not this speak well for the future development of this mine?

WHEAL RUSSELL.—J. Bray, Oct. 29: The lode in the rise above the 25 fm. level is worth 16*l.* per fathom. No improvement in the 25 or the 40 since last report. The lode in the stopes throughout the mine is looking very well. We shall sample to-morrow 100 tons of good ore.

WHEAL UNY.—Wm. Rich, Matthew Rogers, Wm. Rich, jun., Oct. 24: We have begun to clear out the 30, west of incline shaft, west of old works, and have had samples of the lode, which will apparently pay to work. The lode in the 40, west of this shaft, is worth 14*l.* per fathom. The rise in the back of the 121, west of incline, is worth 10*l.* per fathom. The 130 end west has a promising appearance. The 140 west is worth 10*l.* per fathom. There is nothing new to report on in the 150 and 160 fathom levels. The 140, east of King's, ss worth 10*l.* per fathom. The 130 east is worth 12*l.* per fathom. The 120 east is worth 12*l.* per fathom. The 110 east is worth 8*l.* per fathom. The winze in the 100 east is worth 8*l.* per fathom. We are making good progress in Hind's shaft, and have 12 men constantly employed in it, besides labourers discharging the attle. We have to-day sold 16 tons 14 cwts. 2 qrs. 5 lbs. of tin.

FOREIGN MINES.

BATTLE MOUNTAIN.—On the 1st inst. the agent reports:—The 188 ft. level progresses very well. There is no change of ground. Cook's winze, in the bottom of the 188, looks extremely well—a very great improvement since the last report. The lode is 6 ft. wide, most of which is good ore. We are sinking as fast as possible on it. I have great hopes, also great faith in the mine.

On the 8th inst.:—In the 188 ft. level the lode is regular, and the ground is without change of character. Much better progress is being made than was expected. We shall before next report hole to Pierce's winze, sunk from the 113 ft. level. Cook's winze looks equally as well as last report stated. The 188 stopes have fallen off in yield of ores. One, however, still produces some fine ore: 223 sacks raised during the week.

NEWFOUNDLAND.—J. Nancarrow, Oct. 15: In consequence of 13 of the Irishmen having left, and being short of hands to carry out the underground operations, and being busy at surface work which had to be done, there has been but little progress made underground since my last, which has been confined to the points most practical for the future of the mine—Cooper's shaft, McCoy, and the deep adit east, but we have now divided our miners, and put in labourers with them, so as to keep the mine in full operation, and in a few days we shall have a full supply of men to carry out the necessary development of the mine. Cooper's shaft is now being sunk by six men in a lode 4 ft. wide, which is of a very promising character indeed, and will produce 1½ ton of lead per fathom. Here we shall shortly be in a position to drive east and west on the course of the lode at the 20 fathom level, which I have every confidence will open up profitable ground. The 10 fathom level, east of Cooper's, is idle at present, but will be resumed in a few days. The lode presents a kindly appearance, and produces lead for dressing. The 20, east of McConochie, has been resumed this day by four men, which at present is unproductive. This we shall push on as fast as possible, so as to reach McCoy by the time the winze is down, which is about 14 fms. distance; here the lode is 3½ ft. wide, and improving in appearance. The winze and stope east of McCoy shaft have and are being worked by a full pare of six men, on a lode that will still produce from 3 to 4 tons of lead per fathom, leaving equally as productive ground at each end of the stope, which is opening out a fine piece of ground each way. There is no change in the deep adit end, east of Doctor's shaft; the lode is producing a little lead. We have commenced a new stope in the 20, east of McConochie, this day, which showed good lead, though at present not opened out to report its value, which shall be done in my next. We are not yet in a position to commence Kelley's shaft, but intend doing so as early as possible, carry it down in a proper course about 12 ft. long by 6 ft. wide, which will be in the centre part of the mine, and adapted for the purposes of pumping and winding, footway, &c. At surface we have now laid complete a tramway from the dressing floors, the steam-engine for bringing up coals, timber, &c., and we contemplate having a saw-mill in connection with the same as soon as time will admit, but the mine being, I may say, in such a dilapidated state both at surface and underground it will require time to put it in proper order, and so far I have not been able to do it, having only now cleared away the accumulated stuff from last winter. With what has been broken since my arrival we have now dressed lead, No. 1 parcel, 157 tons; No. 2, 20 tons: total, 177 tons. In conclusion, I beg to remark, my opinion of the mine is still the same as at first, and with a further capital judiciously expended, combined with energy, a great and lasting mine will ultimately be opened up.

LUSITANIAN.—Oct. 20: Palhal Mine: The lode in the winze No. 97, sinking below the 70 fm. level, east of River shaft, is small and unproductive; we have now holed this winze to the 80 fm. level.—Levels on Basto's Lode: In the 180, east of Taylor's, the lode is from 8 to 10 ft. wide, composed of quartz, and stones containing copper ore; and in the same level west the lode is 10 ft. wide, of quartz, mundic, and at times stones of ore. The lode in the 170 fm. level west is yielding 2 tons of good ore per fathom. The lode is 5 ft. wide in the 150 east, composed of quartz, with stones of copper and lead. In the 120, east of River shaft, the lode is 1½ ft. wide, composed of country and flookan, and in the 110 east 1 ft. wide, of schist and flookan. The lode in the 90 east is worth ¾ ton per fathom of copper and cobalt ores. In the 70 east the lode is 1½ ft. wide, composed of flookan, quartz, and mundic. In the 28 east the lode is 5 ft. wide, of loose quartz. In the cross-cut in the adit south of branch, west of Perez' shaft, the ground is just the same as for some time past—hard. In the 50, west of Taylor's, the side lode is 2½ ft. wide, composed of flookan and quartz.—Carvalhal: At the 60 cross-cut, south of incline shaft, the ground is rather tighter; we have gone through another small branch of spar, from 1 to 2 in. wide, which is standing about upright, and letting out a small stream of water at each side of the level.

ALAMILLOS.—Oct. 21: The 30, west of San Francisco shaft, has a nice branch of lead, yielding ½ ton per fathom. The lode in the 50, west of this shaft, is large and strong, yielding ¾ ton per fathom. The 85, east of Taylor's engine-shaft, has holed to the level from Rafael's winze; the lode is large, yielding ½ ton per fathom. The lode in the 85, west of this shaft, contains a little lead. In the 50, east of San Victor shaft, the men are put to cross-cut north, where it is thought the main lode is standing. In the 50, east of San Carlos, the lode produces occasional stones of ore. The lode in the 50, east of Judd's engine-shaft, has again improved, and is large, yielding 1½ ton per fathom. In the 60, east of this shaft, the ground continues very hard. The lode in the 40, east of air-shaft, is regular, but unproductive. In the 50, east of Crosby's, the lode is small and poor. In the 30, east of Swaffield's shaft, there is a good lode in the lower part of the end, valued ½ ton per fathom. The 30, west of this shaft, is opening out moderately productive tribute ground, worth 1 ton per fathom. The 50 cross-cut, north of La Magdalena, has passed through a small lode, carrying a nice leader of lead. In Judd's engine-shaft, below the 60, the men are working very regularly. In San Victor engine shaft, below the 50, good progress is being made. The ground in San Adriano shaft, below the 75, is rather hard for sinking. Morris's shaft, below the 40, is going down in a regular lode, yielding 1½ ton per fathom. The lode in Julian's winze, below the 75, yields 2 tons per fathom. In Joaquin's winze, below the 30, there is a nice lode, producing 1½ ton per fathom. Blas's winze, below the 30, is poor at present. Ricardo's winze, below the 40, is being sunk just in advance of the 50, east of San Victor shaft, in a large lode, yielding ½ ton per fathom. Daniel's winze, below the 50, in advance of the 60, east of Judd's, is in a promising lode, producing 1½ ton per fathom. Jorge's winze, below the 40, is being sunk a little to the west of Crosby's air-shaft, and in advance of the 50, east of Crosby's shaft; the lode is worth 1 ton per fathom.

FORTUNA.—Oct. 20: Canada Incosa: The 110 cross-cut, north of Judd's shaft, is in hard ground. In the 80 cross-cut, south of Henty's, there is no change since the last report. In the 50, west of San Pedro, the lode is small and poor. The 60, west of this shaft, is in a small lode and hard ground. In the same level, east of San Pedro, there is a strong lode, composed of spar and lead ore, worth 1 ton per fathom. The lode in the 50, east of San Frederico, is larger than it has been, now worth 1 ton per fathom. The 40, east of San Frederico, is in a large lode, producing 1 ton per fathom. In the 80, west of Kennedy's shaft, the lode is small and poor. The 90, west of Lowndes', is in a very compact lode, yielding 2 tons of ore per fathom. The 90, east of Lowndes', yields ½ ton per fathom, and the lode not quite so large as it was. The lode in the 80, east of Segura's, maintains its value—2 tons per fathom. The ground in Judd's shaft, below the 100, is very hard. There is no change to report in San Frederico shaft below the 50.—Los Salidos: The lode in the 110, west of San Carlos shaft, is firm and compact, yielding 1 ton per fathom. In the 90, west of this shaft, there is a nice string of lead come in on the south wall. In the 120, east of Morris's engine shaft, the lode is regular, containing a little lead ore. The 110, east of Cox's shaft, is going through a long piece of productive lode; present value 2 tons per fathom. The 100, east of San Miguel's, is opening out tribute ground, worth 1 ton per fathom. The lode in the 45, west of Palgrave's engine-shaft, has failed very much within the past few days. The 45, east of this shaft, is unproductive at present. The lode in the 35, west of Swaffield's shaft, has improved, and now yields ¾ ton per fm. The lode in 25, west of Swaffield's, is becoming more settled. Good progress is being made in Buenos Amigos engine-shaft below the 110. Palgrave's engine-shaft, below the 45, is in a compact lode, yielding 2 tons per fathom; the ground is hard. The lode in Swaffield's shaft, below the 35, is not quite so productive as it was, being intermixed with quartz; value at present 2 tons per fathom. Loundre's winze below the 100, east of Cox's, is in a large lode, yielding 2½ tons of ore per fathom. Orive's winze below the 25, west of Palgrave's, produces 4 tons per fm. The lode in Mernio's winze below the 100, west of San Carlos shaft, is small and poor. In Ricardo's winze below the 35, east of Palgrave's, the lode contains a little lead, but not enough to value.

LINARES.—Oct. 21: Pozo Ancho: The 100, east of Warne's engine-shaft, is in a large and strong lode, yielding 2 tons of lead ore per fathom. The lode in the 100, west of this shaft, has a kindly appearance, yielding 2 tons of ore per fathom, and letting out a quantity of water. In the 85, west of Crosby's shaft, the lode is small and poor. In the same level, west of Crosby's cross-cut, the lode is very regular, consisting of quartz, and 1 ton lead ore per fathom. The lode in the 75, west of Crosby's shaft, contains a few spots of ore, but nothing to value. In the 75, west of San Francisco shaft, the lode is compact and regular, producing 1½ ton per fathom. The same level east is in a small lode, yielding ½ ton per fathom. In the 65, east of San Francisco, the ground is hard, and the lode small and poor. The 65, west of this shaft, is opening up stoping ground, worth 1 ton per fathom. In the 55, west of San Francisco, the lode is falling off in value. The same level east is in a small poor lode. In No. 189 winze, below the 45, the lode is getting very small, but yields ½ ton per fathom. In No. 191 winze, below the 75, the ground is wet and troublesome for sinking; the lode yields 1 ton per fathom.—Los Quinientos: The lode in the 80, west of Taylor's engine-shaft, is compact and solid, having a kindly appearance, and producing 1 ton of lead ore per fathom. In the 65, west of this shaft, the ground is favourable for driving through. The lode in the 45, west of Cox's shaft, is small, and the ground hard for driving through. In the 80, east of Taylor's engine-shaft, there is a strong open lode, yielding good stones of lead ore. The lode in the 65, east of this shaft, has improved, and is now worth ½ ton per fathom. In the 55, east of Addis's, there is nothing to value. In the 55, west of San Carlos shaft, there is a strong open lode, producing good stones of lead ore. The lode in the 65, west of this shaft, is small and poor. In the 65, east of the same shaft, the ground is hard, and the lode unproductive. The lode in the 55, east of Judd's shaft, is small, but regular and well defined, and worth ½ ton per fathom. In the 45, east of Judd's, the lode is small, yielding a little lead ore, but not enough to value. There is no change to notice in San Carlos shaft sinking below the 65. Addis's shaft has reached the 65, and the men are driving south to cut the lode. Pedro's winze, below the 55, is in a strong open lode, producing 2 tons of ore. In Pablo's winze, below the 55, the lode has fallen off very much in value, and now yields 1 ton per fathom. The lode in Gill's winze, below the 32, is compact and solid, yielding 1½ ton per fathom.

HORNACHOS (Spain).—The directors have received the following letter:—The column of mineral which is in the end of both the levels in the Afortunada Mine, north of shaft P 1 and south of shaft F 2, continues without interruption, and represents a mineralised lode of 1200 kilos. (22 cwts.) per fathom. The expectation of finding in this place a mineralised column of ore of 30 metres in length, which would alone pay the costs of this mine with excess, has acquired greater probabilities of being realised, and it is expected that by the end of November these two levels will be in communication. In the Descuidada the lode has been laid open for another 17 metres, making now in length 50 metres, all mineralised. The remainder is 40 metres, and the manager hopes the mineralisation will continue throughout, thus making a run of 90 metres of ore-bearing lode. The jigging machinery is being erected with all speed at the Descuidada, and they are now sampling at this mine over 20 tons of dressed ore prepared by hand-jiggers, and continuing the preparation of another 30 tons. The crushing machinery is now being shipped for the Afortunada Mine, and will be forthwith erected, and, pending the making of the water-course, the said machinery will be worked by a portable engine, in order to realise as quickly as possible the ore from this mine.

LANESTOSA.—Oct. 22: Asuncion: Judd's shaft is deep enough for 80 plat, and good progress is making in the excavation for it; lode in shaft worth ½ ton of calamine per fathom. The lode in the 60 metre level south has been found on west side, having a throw of about 6 ft. Ground very hard, and producing ¼ ton of lead and ¼ ton of calamine per fathom. Ventilating winze from 60 metre level is unproductive, and ground difficult for sinking. No. 1 winze from adit north, having met with hard limestone, has been turned on underlie, to hole to 60, further east. In the intermediate level, north from No. 2 adit winze, the lode looks well, and produces ½ ton of calamine and 1½ ton of lead per fathom. In the same level south the lode has been small, but is now widening, and yielding ½ ton of calamine and ¼ ton of lead per fathom. The ore appears to deepen on both sides of winze. The 20 north is being driven as a cross-cut westwards, to intercept main lode. No. 1 stope, in the back of this level, shows a small inclined branch of lead, in hard black limestone, worth ¾ ton of calamine and ¼ ton of lead per fathom. The trial level, driving north from west side of stope, yields ¾ ton of calamine and ½ ton of lead per fathom. The vein of lead is leading out west, towards the main lode, and if continuing in present direction will soon intersect it. The sampling will probably be a little short of the estimate on calamine, owing to the delusive yield of intermediate levels in this ore.

MENZENBERG.—R. K. Roskilley, Oct. 28: The ground in Dickins's engine-shaft is improved in appearance and character, and during the week good progress has been made. This shaft is already sunk about 40½ lachters, or about 46 fathoms below surface, and we have about 3 ft. more to sink the same before driving the cross-cut south, so as to intersect the lode at the 45. We are pushing on this work with vigour, and as soon as the shaft is sunk deep enough, no time will be lost in reaching the lode, through which we sunk the shaft at the 34.

WEST CANADA.—Oct. 1: Huron Copper Bay Mine: The stope in the bottom of the 35, west of Palmer's shaft, is worth 2 tons of copper ore per fathom. Another stope, in the bottom of the 50 fm. level, east of Bray's shaft, is yielding 2½ tons per fathom.

[For remainder of Foreign Mines, see to-day's Journal.]

WHITEHAVEN IRON MINES.

Manager's report for month ending Oct. 28:—Midway drift has been extended 5 fms. 1 ft., at 2*l.* 15*s.* and 3*l.* 10*s.* per fathom, by two men; the lode is about the same as when last reported on. No. 1 drift has been driven by two men 4 fms. 5 ft. at 2*l.* 10*s.* per fathom; the lode is of a very promising character We have put four men in this drift to push it on at a faster rate. The stope in back of this drift is worked by three men and one boy, on day work; the lode is large, and very good, yielding 60 tons of the best quality ore per fathom. Side vein drift has been driven by one man and one boy 6 fms. 1 ft. 6 in., at 2*l.* 15*s.* per fathom; the lode has been very good, but at present it is mixed with a little stone. Intermediate drift, between No. 1 and No. 2, has been driven by four men 6 fms. 1 ft. 9 in., at 3*l.* 10*s.* per fathom. The new drift, driving south from rise, has been driven by four men 6 fms. 1 ft. 9 in., at 3*l.* 10*s.* per fathom; the lode here has been mixed with a little stone, but I think this will shortly wear out, and the lode become as productive as before. The side vein has been driven in No. 2 drift 3 fms. 2 ft., at 6*l.* per fathom, by four men; the lode has been very small, and the ground spare for driving; but I am pleased to say that the ground is greatly eased, and the lode is looking a great deal better for ore than it ever has been. No. 3 drift has been driven by four men 2 fms. 5 ft. 6 in., at 7*l.* per fathom; this drift is well nigh under the large body of ore we have in Nos. 1 and 2 drifts above, and by the appearance of the lode we are expecting to cut into a large course of ore every day. Side vein drift has been driven 2 fms. 1 ft. 9 in., by two men, at 8*l.* per fathom; the lode is improving, and will now yield about 6 tons of ore per fathom. No. 4 drift has been driven 6 fms. 2 ft. 8 in., by six men, at 8*l.*, 7*l.*, and 6*l.* per fathom. No change in the lode to notice since my last report. No. 5 drift has been 6 fms. 3 ft. by six men, at 4*l.* 10*s.* and 7*l.* per fathom; the lode is looking kindly for making a very large body of ore in (say) 4 or 6 fathoms more driving. The indications are very good, by the small veins of soft ore which are coming in from the eastern side and forming themselves into one body on the footwall, which is very encouraging to see.—Blea Tarn: No. 2 drift has been driven by four men 1 fm. 3 ft. 8 in., at 4*l.* per fathom; cross-cut the lode 1 fm. 4 ft., at 4*l.* per fathom; and stoped side of level 3 fms. 4 ft., at 3*l.* per fathom. No change in the lode worthy of notice since last report.—Ban Garth: No. 2 drift has been driven 1 fm. 2 ft. 6 in., by three men

and one boy, at 6*l.* per fathom; the ground is much harder for driving than it was last month, so that we cannot make the progress now we have been doing. We have now employed forty-four miners, four boys as miners, four daymen, one smith, one timberman, and four boys on surface: total, fifty-eight. There have been carted to Drigg station 195 tons 14 cwts. 1 qr. during the past month.—Thos. Rosewarne.

Ravenglass and Eskdale Railway—Engineer's Report, Oct. 29: I am happy to be able to report that 120 tons of rails have arrived, also more sleepers. I anticipate that the permanent way will be laid as far as or beyond the road leading to the "King of Prussia" before the end of November. From 60 to 70 men have been employed on the works during the past month, and the contractor is now increasing the number of platelayers. The locomotive (Mr. Oliver's) is on the line, and will be in steam to-day, I am informed, so that there is now every facility for speedily completing the works. It s important that the Furness Railway Company be urged to put in their siding before the end of next month.

*** With this week's Journal a Supplemental Sheet is given, which contains—Original Correspondence: Hand-Boring, and the Diamond Rock Borer; Tin Mining in Australia (J. Hunt); Silver Mining—the New Pacific (R. Knapp); Coal Mining in Italy (W. J. Jacob); Vendors and Purchasers of Mineral Property; North Wales Slate Quarrymen's Strike; Practical Mining—Filling Ores; Tidal Canals, &c. (W. Austin); Communication across the English Channel (J. De la Haye); Profits on Cornish Mines; Mining in Yorkshire; Gold in the Wye Valley (W. White); Old Friends with New Faces; West Chiverton Mine (J. Johns, R. Clogg); Van Consols Mine (J. W. Collins); Roman Gravels Company; Eberhardt and Aurora Mining Company; Utah Mine, and its Management.—Foreign Mines Reports—Echoes from the Mining Market—Imray's Helical Pump, and Brotherhood's Three-Cylinder Engine (*illustrated*)—Rolling Railway Cars, and Mixed Guage Railways (*illustrated*)—Foreign Mining and Metallurgy—Patent Matters, &c.—Meetings of the Governor and Company of Copper Miners in England, Australian Central Gold Mine, Wicklow Copper, South Great Work, West Great Work, Prince of Wales, North Hendre, Grosvenor, West Wheal Tolgus, Vancouver Coal Mining and Land, Chontales, and West Esgair Lle Companies.

The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—London, Oct. 30, 1874.

COPPER.	£	s.	d.	£	s.	d.
Best selected...p. ton	92	0	0–		—	
Tough cake and tile.	90	0	0–		—	
Sheathing & sheets...	94	0	0–	96	0	0
Bolts	97	0	0–		—	
Bottoms	97	0	0–		—	
Old	85	0	0–		—	
Australian	91	0	0–	92	0	0
Wire ...per lb.	0	1	0–		—	
Tubes	0	1	1–	0	1	2
BRASS.			per lb.			
Sheets			9d.–9½d.			
Wire			9d.–9½d.			
Tubes			11d.–12d.			
Yellow metal sheathing			8d.–8¾d.			
Sheets			8d.		—	
SPELTER.			per ton.			
Foreign on the spot..	23	15	0-	24	0	0
,, to arrive ...	23	15	0-		—	
ZINC.						
In sheets	30	0	0-	31	0	0
Quicksilver (p. bot.)	24	0	0-		—	
TIN.						
English blocks ... £	97	0	0-	98	0	0
Do., bars (in brls.)	98	0	0-	99	0	0
Do., refined	98	0	0-		—	
Banca	97	0	0-	98	0	0
Straits	92	10	0-		—	
Australian	90	10	0-	91	0	0
TIN-PLATES.*			per box.			
IC Charcoal, 1st qua.†	£1	16	0-		—	
IX Do., 1st quality ...	2	0	0-		—	
IC Do., 2d quality ...	1	15	0-		—	
IX Do., 2d quality ...	2	1	0-		—	
IC Coke	1	7	0-	1	9	0
IX Ditto	1	13	0-	1	15	0
Canada plates, p. ton..	19	0	0-		—	
Ditto, at works	18	10	0-		—	

IRON. per ton.	£	s.	d.	£	s.	d.
Bars Welsh, in London	9	5	0-		—	
Do., to arrive	9	0	0-		—	
Nail rods	9	15	0-		—	
,, Staffd. in London..	10	5	0-	11	0	0
Bars ,, ditto ...	11	0	0-	12	0	0
Hoops,, ditto ...	12	0	0-		—	
Bars ,, at works ...	10	0	0-	11	0	0
Hoops,, ditto ...	11	0	0-	12	0	0
Sheets, single, & plates	12	15	0-	14	0	0
Pig No. 1, in Wales ...	5	0	0-	6	10	0
Refined metal, ditto ...	7	0	0-	8	0	0
Bars, common, ditto...	8	5	0-	8	10	0
Do., merchant, f.o.b. in Tyne or Tees...	8	10	0-		—	
Do., railway, in Wales..	7	0	0-	7	5	0
Do., Swed. in London.	16	0	0-	17	0	0
To arrive	17	5	0-		—	
Pig, No. 1, in Clyde ...	4	7	0-	5	12	6
Do., f.o.b. Tyne or Tees	4	0	0-	4	5	0
Do., Nos.3,4, f.o.b., do.	3	10	0-	4	0	0
Railway chairs	5	0	0-	5	5	0
,, spikes	12	10	0-	14	0	0
Indian Charcoal Pigs, in London, p. ton ...	8	0	0-	10	0	0
STEEL.			per ton.			
Swed., in kegs (rolled)	—		—		—	
Ditto (hammered).....	19	0	0-	20	0	0
Ditto, in faggots.....	20	10	0-		—	
English, spring	19	0	0-	24	0	0
LEAD.			per ton.			
English Pig, com.....	23	5	0-	23	10	0
Ditto, L.B.	23	0	0-	(nom.)		
Ditto, W.B.	24	0	0-		—	
Ditto, sheet	24	10	0-		—	
Ditto, red lead	24	0	0-	24	5	0
Ditto, white	30	0	0-	32	0	0
Ditto, patent shot	26	10	0-	26	15	0
Spanish.....	22	17	6-	23	0	0

* At the works, 1s. to 1s. 6d. per ton less. † Add 6s. for each X.

Terne-plates 2s. per box below tin-plates of similar brand.

Remarks.—There appears to have been a good deal of needless anxiety regarding the probability of dear money, which may have given rise to misapprehension, and thus caused increased restriction in trade. The fact is, that any tendency towards tightness which existed a week or two ago has very much passed away, and unless some new feature crops up the present rate of discount may probably rule until the end of the current year, and as this is very moderate, and as experience has proved that a 5 per cent. rate does not interfere with the development of trade, business may possibly be to some extent assisted.

The position of the markets is, on the whole, satisfactory, although the amount of business actually done is restricted within narrower limits than could be wished, more especially as regards iron. But, viewing the bearings of various questions which all more or less affect the future of metals, there seems to be reason to look forward to a period of greater prosperity than has marked our markets for some time past. When this turn in the tide of events may take place it is not altogether easy to determine, but unless some unforeseen cause should arise it appears probable that the coming year will bring with it a time of marked improvement.

Some of the reasons which tend to the formation of this view are as follows:—The abundant harvest which has been gathered in from almost all quarters, which forms the basis of all commercial prosperity, the effect of which has not yet been realised, the almost universal peace which at present reigns supreme, the recovery of the famine striken districts in India, and the healthy condition to which the finances on the Continent and America are gradually returning, the development of the railway systems and electric telegraphs throughout the world—all these causes combine to materially aid in the expansion of the trade and commerce of the country. The prevalence of high prices and the great difficulties which have arisen in connection with the labour market has during this year mainly caused the long-continued dulness in the metal market, of which there is so universal a complaint, but now that prices have generally moderated, and the much-vexed question of labour *versus* capital is finding its level—these obstacles to an improved condition of affairs will, it is hoped, be materially lessened, if not definitely removed.

Copper.—This metal has been in very good demand, at rising prices, and there is every probability of the market going higher. The deliveries continuing so large, and supplies being very reduced, caused holders to be disinclined to accept current rates for more than small quantities. Not only is the statistical position of this metal extremely favourable, which is shown by the fact that the stock of Chili produce in February, 1873, amounted to 24,900 tons, and has since decreased so much that, according to the last return, it stood only at 14,200 tons, and it is expected that the next statement will show a still greater reduction, but that which is equally important is the great strength of the principal holders. It is said that the main bulk of ore and regulus is held by one of the chief importers, whose position renders him independent of the fluctuations of the market, and a strong tone is imparted thereby. Dealers are supposed to have very little to dispose of, and have almost withdrawn from the market as sellers. The principal smelters in Chili are reported to have come to an end of their contracts for ore, and they are unable to effect further contracts except upon considerably higher terms; and, owing to the fact that mines producing poor ores are not at work because of the low rate of prices, which left nomargin for profits, Chili smelters are necessitated to fall in very much with the demands of the miners. Stocks of copper everywhere are reported to be light, and the demand for various purposes being on the increase augurs very well for the future of this market; and should the course of this metal continue to improve as it is now doing there is a prospect of a 10*l.* rise before very long. At the commencement of the week Chili bars changed hands at about 82*l.* cash terms. Throughout the week the market has been daily stiffening, and prices have shown a tendency to advance, and the amount of business actually transacted would have been larger had buyers been able to operate to the extent they were disposed. The limited supply of copper to be dealt in alone restricted the amount of business done. The market closes Chili bars 83*l.* 10s. cash.

Iron.—There is no change of importance to report in the condition of the Iron Trade during the week. There has very generally been a lack of animation in all districts and departments, but no alteration of moment has occurred in quotations. The make of pig-iron is on the increase, and fresh furnaces are being blown in; while on the other hand, the demand is not so active as it has been, and stocks are consequently likely to increase. The price of pigs, it is thought, will not materially recede—unless, indeed, there should be an unexpected reduction in the cost of fuel and labour. The rail trade still continues very quiet, and what support there is to the market is derived from the demand which exists for merchant bars and plate iron for shipbuilding. The Scotch Pig-Iron Market, which closed last week at 82s., opened steady on Monday at 81s. 9d., and business was done up to 82s. 3d. Throughout the week the market has been firm, and prices have slightly advanced. To-day's quotations are about 84s. 6d.

Shipments.

Week ending Oct. 24, 1874	Tons 10,324
Week ending Oct. 25, 1873	11,435
Decrease	1,111
Total decrease since Dec. 25, 1873	154,842

Lead.—The market is very firm, and quotations are higher. A larger business would have been done than has transpired had there not been difficulties with respect to delivery. Smelters have more orders on hand than they can well execute, and supplies of Spanish lead come forward so slowly and in such small quantities that no relief is afforded to the existing pressure.

Spelter.—English hard has changed hands at 15*l.* 5s., and Silesian is quoted 23*l.* 15s. to 24*l.*

Zinc.—A parcel of London rolled has realised 29*l.* 5s. to 29*l.* 10s.

Quicksilver.—Business has been done in this metal at 24*l.*

Tin.—A fair steady business for consumption has been transacted during the week, and prices have been somewhat irregular. At the present time there is very little offering, and quotations show a slight advance upon last week. Straits, 92*l.* 10s.; English, 97*l.*; Australian, 90*l.* 10s.

Tin-Plates.—There is no change to report in the tin-plate market.

Messrs. Vivian, Younger, and Bond—Copper: There has been a fair demand for Chili bars, at from 81*l.* 10s. to 82*l.* 10s. cash terms, and 83*l.* to 83*l.* 10s. in picked brands, also at 83*l.* 10s., with three months' prompt, the market closing firm at 83*l.*, rather buyers than sellers. On the 23d inst. the advices, which have been much delayed, came to hand, dated 2d inst. at Valparaiso, of charters for the month of September, representing about 3100 tons fine, being a moderate quantity. In furnace stuff, 235 tons Chilian ores sold at 16s. 1½d., and 400 tons of regulus at 16s. 7¼d. per unit at Swansea. Australian sorts rather neglected, at 92*l.* to 92*l.* 10s. for Wallaroo cake and ingot, and 90*l.* 10s. to 91*l.* for Burra. Ingots of other brands at 87*l.* to 89*l.*, according to quality. English manufactured only in moderate request, at 95*l.* to 96*l.* for strong sheets, but in tough and best selected there has been more enquiry, with sales at 88*l.* to 89*l.*, and 90*l.* to 91*l.* respectively.—Tin: Large supplies of Australian metal continue to arrive, which have met with a fair demand, at 90 to 91s., as in quality, with some sales to arrive both near and distant, at the former figure. Straits has sold at from 91s. 6d. to 92s. 6d. landing on the spot, and for arrival steamer named, 91s. to 91s. 6d. The market closes with a slightly better tone.

Messrs. James and Shakspeare—Copper: By private contract a cargo of Chili furnace material lying in Swansea was taken at 16s. 1½d. for ore, and 16s. 7½d. for regulus. On the 23d inst. the Chili charters for last half of September were advised by telegram as about 2000 tons, but no details were given. The news seemed to be regarded as favourable by buyers, who came forward immediately upon receipt of same and bought freely, which course of action they have since continue to follow, the result being a rise in prices of 20s. to 30s. per ton. For Australian there is little or no enquiry, but holders are very firm, and purchases are difficult to effect at full rates. English sorts are unchanged, and smelters will only accept orders on their own terms.—Tin: English remains quiet at list quotations. In foreign sorts considerable activity has existed since the date of our last issue, Australian again forming the chief part of the business; but, notwithstanding that the dealings were on an extensive scale, the largeness of the qnantity available quite prevented any improvement occurring in values. A moderate trade was also done in Straits, which, being rather scarce on the spot, fetched comparatively high rates, but parcels to arrive were obtainable at more reasonable prices.

Messrs. Henry Rogers, Sons, and Co.—Copper: The West Coast charters for the month of September are cabled as 3100 tons, making for the nine months 35,300 tons, against corresponding period last year 32,300 tons. The market on arrival of this news was not affected either way, but during the current week the demand has apparently increased, and from 81*l.* 10s. bars are fully 30s. dearer. The price has advanced not so much from the large business doing as from the apparent scarcity of available spot copper, most of the stock being held for higher prices. English is in very small demand, and to effect sales the smelters have had to concede 3*l.* and 4*l.* below the equivalent of West Coast produce. The trade generally is in a very unsatisfactory condition again, raw material being so much in proportion above the usual difference for finished copper. Yellow metal, brass, &c., are reduced this week 50s. per ton in spite of the rise of 30s. in copper. From outward appearances it would seem Chili bars are 3*l.* above their value, but it is more likely that English copper will shortly reach the equivalent of Chili than that the latter should fall to the present relative value of English. We consider that the increased importations of fine copper from America and elsewhere have contributed in some degree to produce the present limited demand for fine English.—Tin: Prices are very firm, business having increased.—Spelter: The demand is good, both here and in France, and spot parcels are difficult to procure. Prices have further advanced on the Continent, and English is held for a long figure. Zinc is much wanted, and the supply very small.—Lead has further increased in value, 23*l.* 2s. 6d. being now asked for December. The same difficulty as to delivery appears to exist in France as here.

Messrs. Pixley and Abell—Gold: There has been a little more enquiry for bar gold this week, about 113,000*l.* having been withdrawn from the Bank, in addition to 47,000 sovereigns, while 10,000 sovereigns and 4000*l.*, in bars, have been sent in. The demand for Alexandria has sensibly diminished. The Moselle, from the West Indies, has brought 75,000*l.*, and about 17,000*l.* has arrived from Africa. The Peninsular and Orientol steamer, due on Nov. 2, brings 583,000*l.*, of which 180,000*l.* consists of sovereigns, the remainder being bar gold and foreign gold coin. The Great Britain steamer, expected next week, has about 72,000*l.* on board. The Peninsular and Oriental steamer Malwa took only 23,000 sovereigns for Alexandria.—Silver: There has been some demand for silver since our last, but the market has been bare of supplies. About 42,000*l.* has come to hand from the United States, and 45,000*l.* has arrived by the Moselle from the West Indies. The last quotation is 57 13-16ths per oz. standard.

The Iron Trade—(Griffiths's Weekly Report).—Friday Evening Oct. 30: We have to report an improvement of about 2s. per ton in Scotch pig-iron on the Glasgow Exchange this week. The closing price this day (Friday) week was 82s. 6d.; the market leaves off this afternoon at 84s. 6d., sellers, giving the gain above referred to. We quote makers' No. 1 iron as follows:—Gartsherrie, 106s.; Coltness, 106s.; Calder, 103s.; Langloan, 103s.; Summerlee, 99s.; Monkland, 90s., f.o.b. Glasgow; Glengarnock, 96s.; Eglinton, 88s. f.o.b. Androssan, Shotts, 103s. f.o.b. Leith; Kenniel, 95s. f.o.b., Bo'ness. The stocks of iron continue very low in Connal's stores, particularly of No. 1. We have had a good business in most kinds of iron in London this week. The demand for hoops and sheet-iron continues unabated. Merchants have difficulty in getting orders for the best brands of sheet-iron up from the works. The best makers particularly appear to be much pressed for deliveries of thin gauges. The demand for galvanised, particularly the Gospel Oak and the Mitre works at Wolverhampton, belonging to the same firm, are working at full stretch; the galvanising pots at the Mitre Works, Wolverhampton, being kept at work night and day. These works consume their famous Gospel Oak sheets, which contributes to the extraordinary demand for the galvanised sheets produced by Mr. Lee at these large Welverhampton works. We have a very steady demand for best marked bars, and two houses in Staffordshire, who stand at the top of the list for quality, hesitate now to book orders for delivery at present prices during this quarter. This looks well for the trade. The trade in boiler-plates has improved since we last wrote. Most of the Staffordshire makers now have orders to keep the plate-mills going, and a noted house in Shropshire is particularly busy, not only in plates, but wire-rods, and all other kinds of best iron. The wire-rod trade altogether is better on this market. We have likewise a very good business in second-class Staffordshire bars. The deliveries of Staffordshire and Shropshire iron in the Thames this week are larger than for many months past. This view of the deliveries is corroborated by the statements of the railway and canal companies' agents in the Black Country.

There is no change to notice this week in the markets at Barrow and Middlesborough; probably the raw material is firmer at both centres. Finished iron is inactive. At Glasgow Scotch pigs are better. The meeting at the Birmiugham Exchange yesterday was very well attended. The representatives of the marked houses reported a satisfactory state of things. As mentioned above, two of the leading firms find orders coming in faster than they can execute them. The makers of second-class bars all appear to be fully occupied, and the trade in sheet iron, hoops, nail-rods, small rounds, and small angles for the Birmingham bedstead makers was generally reported in a satisfactory condition. The Horsley furnaces, lately in the occupation of John Colbourn and Sons, are placed in the hands of Messrs. Bourne and Owen, the well-known solicitors of Dudley, to be sold or let. The pig-iron market at Birmingham was firm, with a moderate business. It is a well-known fact that the stocks are low on the pig banks, at the furnaces, and the manufactories; but the latter are not at present disposed to purchase heavy parcels. The Bedworth pigs, noticed in former reports, continue to grow into greater favour with the manufacturers, and were sold yesterday at 5*l.* 2s. 6d. to 5*l.* 5s. frequently on the Exchange. Cinder pigs were firmer; Parkfield are 3*l.* 5s., with no abatement under any circumstances. The stocks at these furnaces are all cleared off, and all other cinder pigs must be reported firmer at this market. The galvanisers of Wolverhampton and Birmingham are all busy, and consuming large quantities of sheets. The foundries and engineering shops of the Black Country are in a prosperous condition.

The Mining Share Market has been slightly firmer this week, without any material increase of business or change in quotations, which for the most part are nominal, and not to be relied upon when actual business is proposed. The settlement of the fortnightly account took place on Friday, but was of small amount.

The mines mostly in favour have been Wheal Peevor, Wheal Grenville, Roman Gravels, West Tolgus, Van Consols, South Roman Gravels, Wheal Crebor, and a few others.

No change in Tin shares, though there is every probability of a rise in that metal ere long. Dolcoath remain at 45 to 47; Carn Brea, 55 to 57½; Tincroft, 29½ to 30½; East Lovell, 10 to 11; Cook's Kitchen, 9 to 9½; Cargoll, 1⅞ to 2; Devon Great Consols, 1¼ to 1½; East Caradon, 1 to 1¼; East Pool, 8 to 9; Herodsfoot, 3 to 4; Hingston Down, ⅝ to 1; Marke Valley, ⅝ to 1; Penhalls, 1½ to 1⅝. Wheal Peevor have been in demand, and advanced to 4, 4½; the lode in the shaft, 5 fms. below the 48, has improved to 120*l.* per fathom, and is said to be the finest discovery made in the neighbourhood for a long time. A few months ago the shares were at a mere nominal price, and the shareholders who held on, in the face of heavy calls and the discouraging nature of the times, will now meet their reward.

West Tolgus, 68 to 70 ex. div.; at the meeting, on Tuesday, a dividend of 1*l.* 5s. per share (450*l.*) was declared, leaving a balance in favour of the company of 237*l.* The accounts showed copper ore sales, less dues, 3917*l.*; costs for the two months ending August, 3177*l.*; profit, 739*l.* From the ores already sold it is anticipated that the same dividend may be declared at the next bi-monthly meeting. The sampling for November and December is 231 tons of copper ore. The agents' report states that a rise has been communicated from the 125, west of Taylor's shaft, to the 115, 5 fms. west of the present end, and through a lode worth 10 tons of ore per fathom all the way. The 125 end is worth 4 tons of copper ore per fathom. A stope in the back of the 125 is worth 75*l.* per fathom. Wheal Grenville, 5½ to 5¾; the lode in the 160 fm. level cross-cut is still worth 30*l.* per fathom for tin. Pennerley, 1½ to 1⅝; Penstruthal, 10s. to 12s. 6d.; Providence Mines, 4½ to 5; Roman Gravels, 13½ to 14½; Rosewall Hill and Ransom, 5s. to 7s. 6d.; South Carn Brea, 1⅝ to 1⅞; South Caradon, 95 to 100; South Condurrow, 3 to 3¼; South Frances, 8 to 9; St. Ives Consols, 7 to 8.

Prince of Wales, 10s. to 12s. 6d.; at the meeting (particulars of which will be found in another column) the accounts shewed a cash balance in hand of 629*l.* 4s., and liabilities over assets of 71*l.* 1s. The copper ores sold since last meeting realised 1415*l.* 4s. 3d.; labour costs to Sept. 12, 1240*l.* 14s. 9d.; bills, 378*l.* 17s. 9d., lords' dues, &c., making up costs for four months, 1670*l.* 16s. 2d. The agents state that at the last meeting they had hoped ere this to have intersected the cross-course, and got into ore ground at the 77, but the ground has been harder than expected, and they hope soon to reach the desired point. They also expect an improvement in the 65 east, and to sample 100 tons of copper ores for the next two months. Some dissatisfaction having been expressed at the present working of the mine, another meeting is to be convened to take into consideration its future management. Tankerville, 7 to 7½; Trumpet Consols, 1 to 1⅛; Van, 22 to 24; Van Consols, 2⅛ to 2⅜; West Frances, 9 to 10.

South Roman Gravels, 12s. 6d. to 15s.; the mine is now in fork again, and active operations will be at once resumed. In cutting the foundations for the boiler-house it will be remembered that a new lode of great promise was discovered, and from its direction it is expected that it will form a junction with the old lode in a few fathoms driving. This will soon be ascertained at a depth of 30 fms. from surface. West Seton, 22½ to 25; Wheal Kitty (St. Agnes), 5 to 5¼; Wheal Uny, 1⅞ to 2; West Esgair Lle, 1⅞ to 2⅛.

Chontales, ⅜ to ⅝; the directors' report, to be presented to the shareholders at their fourth general meeting, on Nov. 2, shows that a profit of 3589*l.* 15s. 2d. has been made on the last twelve months' working, or an average of 300*l.* per month. The quantity of ore treated was 21,491 tons, producing 4328 ozs. of gold—12,180*l.* 6s. 1d. in money. The financial position of the company shows a balance in hand at the end of the year of 5000*l.*, which will be kept as working capital. The total quantity of gold returned since the formation of the company has been 12,486 ozs., which realised 34,864*l.* 2s. 6d. Almada and Tirito, ⅜ to ⅝; Birdseye Creek, 2 to 2¼; Cedar Creek, 1¼ to 1½; Don Pedro del Rey, 9s. to 11s.; Eberhardt and Aurora, 4½ to 5¼; Emma, 1¼ to 1½; Flagstaff, 1⅝ to 1¾; Frontino and Bolivia, 10s. to 12s. 6d.; Last Chance, ⅞ to 1¼; Malpaso, ½ to ⅝; New Quebrada, 3⅛ to 3⅜; Rica (Gold) ⅛ to ⅜; Richmond, 6½ to 7; St. John del Rey, 240 to 245; South Aurora, 10s. to 12s. 6d.; Sweetland Creek, 2⅜ to 3; Tecoma, 7-16ths to 9-16ths.

The Market for Mine Shares on the Stock Exchange during the week has continued to present the same encouraging features noted the last few weeks, and although business has been necessarily restricted by the intervention of the fortnightly settlement, which was concluded yesterday (Friday), the general aspect of the market indicates a renewal of activity, and a further advance in prices. Beyond a growing desire on the part of holders to average their interest in approved mines at the present comparatively low level of quotations, the general investing public would seem to be taking considerable advantage of the opportunity now offered of purchasing shares in leading well-selected descriptions. This to no small extent explains the surprise often expressed that a limited enquiry brings about a rapid upward movement, and a consequent difficulty in obtaining stock at anything approaching quoted values. The metal market has again maintained its steady and improving tone, and in most descriptions an increasing amount of business has been transacted.

American Mines have been without any material feature, and prices generally have tended adversely. The Eberhardt direction has been completely re-formed. The chairman—Mr. De Pass—has tendered his resignation; Mr. Ridsdale, the former chairman, has resumed his position; Mr. Applegarth, Dr. Bridgwater, and Mr. Wilde (director of the Cape Copper Company) have accepted seats at the board. A meeting of shareholders will be shortly convened, when the accounts for the past half-year will be submitted. It is understood that the debentures are now being well subscribed for, and that everything is progressing satisfactorily. Shares in the various Hydraulic Mines have been comparatively neglected, although many transactions have been recorded. Sweetland Creek, Birdseye Creek, and Blue Tent shares are steady at quotations. Cedar Creek have been somewhat enquired for, and close firm at quotations. Malabar, Malpaso, and Rica shares are without any alteration.

Emma shares are nominally quoted 1¼ to 1½; a cablegram has been received from the Chairman and solicitor in New York announcing that the attachment has been temporarily removed; 210⅝ tons of ore have been sold, of an average value for silver of 95½ ozs. per ton. Flagstaff shares remain unchanged at 1⅝ to 1¾; there is nothing new to report. Last Chance, ⅞ to 1⅛; Tecoma, ⅜ to ½.

Richmond Consolidated, 6⅝ to ¾; cablegram received—"$30,000, five days. Accident to machinery. Lode in bottom magnificent. Sunk 20 ft. more in fine ore." With such an overplus of fine ore waiting to be smelted, the delay caused by the temporary failure of the machinery is very vexatious; the resources of the mine have increased so fast of late that it is probable the engine-power has been overtasked; be this as it may, it is evident that a large increase in that power must soon be made, in order to deal with the large additions to the daily output which the recent developmens enable the mine to yield at present. The report in the cablegram that the "lode in bottom of the mine is magnificent" probably relates to the original main lode; and the concluding sentence, "sunk 20 ft. more in fine ore," to the last newly-discovered lode, situated at a considerable distance from the former and at a much greater depth—the lowest point reached in this new lode being about 500 ft. from the surface. Both the two recent grand discoveries have now been proved to be 70 ft. in depth. It is difficult at present to form an accurate estimate of the addition thus made to the proved wealth of the mine, but it must be sufficiently great to satisfy the most exacting. The season's make of bullion to present date is $993,000.

Blue Tent, 5 to 5½; Col. Tozer has nearly closed down for the winter; he reports the prospects for next year as most encouraging. Sweetland Creek, 2⅞ to 3; Mr. McLean does not report any change. He is getting everything in a forward state to re-commence washing. Birdseye Creek, 2 to 2½; the superintendent writes that he is putting everything in order against the coming water season. On Sept. 30 the tunnel was in 393 ft., or more than half the required length. Cedar Creek, 1 1-16th to 1 3-16ths; the superintendent, under date Oct. 8, writes that he is still washing in the Yankee claim, but cannot continue much longer. Prof. Price has examined the property, and speaks well of the work accomplished and the future prospects.

Sierra Buttes; 1¾ to 2⅛, ex div.; the advices from the mine continue good. Plumas Eureka, 1¼ to 1⅜; the Clamper shoot is opening out well, and the quartz improving. Independence, 1⅜ to 2¼; the fourth level and stope continue in good quartz. London and Californian, ¼ to ⅜; the stope in the level driving from Prospect shaft yields ore of high grade.

New Zealand Kapanga, 3 to 3½; the mail, *via* Brindisi, this week has brought advices with particulars of the new lode, the discovery of which was announced by telegram at the end of August. The lode is 3 ft. 6 in. wide, and of a most promising appearance, leading the agent to infer that it is larger and a more general paying gold-bearing reef than the old Kapanga lode, which is known to be of the richest description. There are 400 ft. of backs now available for working, and the lode traverses the property for 1200 feet. The assay gives 32 dwts. gold to the ton, a produce sufficient to leave about 1 oz. of gold per ton profit. Altogether the company has reason to be satisfied with the appearance of the mine, and to all appearances the company have a prosperous future before them. The full report will be found in another column.

Port Phillip, ⅝ to ¾; 5060 tons of quartz were crushed for the four weeks ending Aug. 12, and 22 tons of pyrites treated, the gold obtained being 970 ozs., or an average of 3 dwts. 20 grains per ton; the profit was 573*l.*

Van, 22½ to 25; there is no alteration since the report published

last week; the mine is looking remarkably well, and everything is progressing in a satisfactory manner. Van Consols, 2¼ to 2⅜; and a total absence of sellers of any number of shares. Glyn shares are being rapidly absorbed, the following was received at the company's office yesterday (Friday) evening:—"In the 25, west of No. 2 winze (one of the most important points in the mine) improving fast, some fine lead ore making its appearance; particulars by letter to-night."

Bog, ⅛ to ¼; at the meeting on Wednesday it was decided to go into liquidation, the application for shares not being sufficient to warrant the directors in proceeding further with the scheme for reconstruction. A full report will be found in another column. It is a matter of regret that the shareholders should neglect this opportunity of putting the company into a sound position. We do not for a moment believe that the mine will be abandoned, but the shareholders have missed the opportunity, and whoever steps in to purchase the property from the liquidator will reap the advantage of the outlay made by the present company and the discoveries it has led to The agents report will be found in another column. Pennerley, 1½ to 1⅝; the old mine is looking much better, and several points show good indications of an improvement. At Potter's Pit the cross-cut at the 65 is within a few feet of the lode; the new discovery continues to open out most promisingly. West Esgair Lle, 2 to 2⅛; the annual report and accounts have been issued this week in anticipation of the yearly meeting, to be held on the 5th proximo. The agents' report is exceedingly satisfactory, and is altogether one of the most progressive statements we have read for some time. The directors propose to increase the capital of the company by the issue of 2000 new shares at par (2*l.* per share), and no doubt the shareholders will promptly subscribe, having such an encouraging mine to develope. A feature in the report is the statement that additional water rights have been secured, thus preventing the possibility of delay from drought, such as stopped the mine in the past summer.

Subjoined are the closing quotations:—

Bog, ⅛ to ¼; Carn Brea, 58 to 60; Cook's Kitchen, 9¼ to 9¾; Devon Great Consols, 1 to 1½; Dolcoath, 46 to 47; East Caradon, ⅞ to 1; East Lovell, 10 to 11; Great Laxey, 11½ to 12; Hingston Down, ⅞ to 1⅛; Holcombe Valley, 1 to 1⅛; Marke Valley, ⅞ to 1; Pennerley, 1½ to 1⅝; Parys Mountain, 5s. to 7s. 6d.; Penstruthal, 10s. to 12s.; Roman Gravels, 13½ to 14; South Condurrow, 3 to 3¼; Tincroft, 29½ to 30⅛; Tankerville, ⅞ to 7½; Van, 22½ to 25; Van Consols, 2 to 2⅛; West Basset, 8 to 8⅛; West Chiverton, 1¾ to 2; West Esgair Lle, 2 to 2⅛; West Tankerville, ⅜ to ⅝; Wheal Grenville, 4½ to 5; Almada and Tirito, ⅛ to ¼; Birdseye Creek, 2 to 2¼; Cedar Creek, 1 1-16th to 1 3 16ths; Cape Copper, 27½ to 28¼; Colorado Terrible, 3½ to 3¾; Chontales, ⅜ to ⅝; Don Pedro, 9s. to 11s.; Eberhardt and Aurora, 4¼ to 5¼; Emma, 1¾ to 1½; Flagstaff, 1⅝ to 1⅞; Frontino and Bolivia, 10s. to 12s. 6d.; Independence, 1¾ to 2¼; Last Chance, ⅛ to 1½; Malpaso, ½ to ¾; Malabar, ½ to ¾; New Pacific, 7s. 6d. to 10s.; New Quebrada, 3½ to 3¾; Port Phillip, 9 16ths to 11-16ths; Rica, ½ to ⅝; Richmond Consolidated, 6½ to 7; Sweetland Creek, 2¾ to 3; South Aurora, 10s. to 12s. 6d.; St. John del Rey, 240 to 245; Sierra Buttes, 1¾ to 2, ex div.; United Mexican, 2½ to 2⅝; Blue Tent, 5 to 5¼; New Zealand Kapanga, 3 to 3¼.

Collieries and Ironworks.—Business, if anything, has been a shade easier, and quotations are in many instances rather lower, but only a few transactions have been recorded. The shares chiefly dealt in have been Thorp's Gawber, Bilson and Crump, Cardiff and Swansea, Chapel House, Ebbw Vale, New Sharlston, Silkstone and Dodworth, Rhymney Iron, Nant-y-Glo and Blaina, and one or two others. West Cumberland Iron and Steel, 14 to 15; Staveley Coal, 117 to 118; Skerne Iron, 8 to 10; Sheepbridge Iron, 80 to 81; Albion Steel, 1 to 1½; Palmer's Shipbuilding, 18½ to 19½; Original Hartlepool, 9 to 9¼; John Bagnall, 7 to 7¼; Merry and Cuninghame, 69s. to 71s.; Ebbw Vale, 6¾ to 6¼ dis.; Charles Cammell, 7¼ to 7 dis.; Chillington Iron, 5¾ to 6¼. Raw material continues to be in fair request, and prices are, consequently, well sustained. Ordinary clay ironstone sells at from 14s. 6d. to 18s. per ton, and oolitic ores at 9s. 6d. and upwards per ton. There is no Spanish hematite ore in the open market, but good red British ores from Cumberland and Cornwall are quoted on the spot from 25s. to 22s. per ton. Of 152 blast-furnaces in the North of England only 22 are now idle, while 14 new ones are being constructed. The Loftus Iron Company (Limited) have just blown in 2 furnaces at Skinnigrove, between Whitby and Saltburn. Within the past three weeks 5 new furnaces have been put into operation on Teeside. The half yearly meeting of the Vancouver Coal Company will be held on Tuesday. The accounts as presented in the report show a profit of 3450*l.* 16s. 9d., which, added to the previous balance, leaves for disposal the sum of 5364*l.* 4s. 9d. The shipments of coal were 26,367 tons, and the total output 23,218 tons, the difference being the coal in stock. Of this amount the Douglas Mine on the mainland contributed the quantity of nearly 16,000 tons. The output from the Newcastle Mine was only 498 tons, the work having been almost confined to bore-sinking, with a view to ascertain the extent of the seam. The directors, after much consideration, have decided to employ the Diamond boring apparatus, and one of the machines will be sent out so as to commence work in the spring. The cost of this machine, together with the exclusive right to use the invention in British Columbia, will cost 2000*l.* The dividend recommended for the half-year will be at the rate of 10 per cent., leaving 123*l.* 4s. 9d. to be carried forward. Glaisdale Quarry have been in good demand, closing 20s. to 22s. 6d.; Chapel House, 4½ to 5; Cle Hill, 7s. 6d. to 10s.; Cardiff and Swansea, 4¼ to 4½; Bilson and Crump, 10½ to 11; Newport Abercarn, 4 to 4½; West Mostyn, 2½ to 3; Richards and Company, par to 1 prem.

The Glyn Lead Mining Company (with a capital of 20,000*l.* in 10,000 shares of 2*l.* each), to which attention was directed in last week's Journal, has been formed to work the mineral ground immediately contiguous to Van Consols proper. The highest opinions are entertained of great success resulting from the opening of the Van lode, which runs directly through the property. Attention is drawn to the fact that this lode, in the neighbouring mine, has sold ore to the value of over 400,000*l.* during the last five years, and is now selling 500 tons per month; and the directors are sanguine that complete success will attend the development of this rich lode in the Glyn Mine. Of the 10,000 shares into which the capital is divided, 500 are bonus shares, and the remainder are offered to the Van Consols shareholders; for each share subscribed for, one fully paid-up bonus share will be allotted, provided the application be made on or before Nov. 6; and assurances have been received from the majority of the large shareholders in Van Consols of their intention to avail themselves of the offer thus made.

The list of applications for shares in the Homer Hill Colliery Company (Limited) will close to-day, Saturday.

It is announced that the Lists of Application for the issue of 200,000*l.* Sterling Seven per Cent. First Mortgage Bonds to Bearer of the Little Rock Bridge Company will be closed on Wednesday next, Nov. 4, for London, and on Thursday, Nov. 5, for the country. The price is 1¼ to 1¾ prem.

Chemicals and Minerals—(Messrs. J. Berger Spence and Co. Manchester, Oct. 28).—Soda: Cream caustic, 60 per cent., 14*l.*; white, 15*l.* 5s.; soda ash, 2¼*d.* to 2½*d.*; soda crystals, 5*l.* 10s. to 5*l.* 15s.; bi-carbonate, 16*l.*; salt cake, 3*l.* 5s.; Glauber salts, 2*l.* 17s. 6d. to 3*l.*—Bleaching Powder: At 9*l.* 15s. to 10*l.*—Alum: 8*l.* for loose lump; ground, 9*l.*—Nitrate of Soda: At 13s. 6d. to 13s. 9d.—Ammonia: Sulphate, white and grey, 18*l.* to 18*l.* 5s.; carbonate, 7½*d.*; muriate, 30*l.* to 35*l.*; sal ammoniac, 1sts, 45s.; 2nds, 44s.—Potash: Muriates, 80 per cent., 6*l.* 10s. to 6*l.* 12s. 6d., f.o.b.; Prussiate, red, 2s. 6d.; yellow, 1*l.*; chlorate, 11d.; bi-chrome, 6½*d.*—Iron Salts: Green and rusty copperas, 60s. to 65s.—Copper Salts: Sulphate of copper, 27*l.* 10s.—Litharge; Best flake, 25*l.* to 26*l.* 10s.—Sugar of Lead: Brown, 28*l.* 10s.; ditto, white, 44*l.* 10s. Saltpetre: Foreign, 22s. to 22s. 6d.; refined, 28s. to 28s. 6d.—Acid: Tartaric, English, 1s. 7¾*d.*; foreign, 1s. 7¼*d.*; oxalic, 7*d.*; sulphuric, 3*l.* 10s. to 3*l.* 15s.; carbolic, No. 1, 11d. to 1s.; picric acid, 1s. 11d. per lb.—Arsenic: 10*l.* for white powdered.—Magnesia: Epsom salts, 4*l.* 2s. 6d. to 4*l.* 5s.; refined, 4*l.* 10s.—Benzole: 30 per cent., —; 50 per cent., —; 90 per cent. —.—Wood Pulp: Labro moist, 5*l.* 10s. per ton at out port.—Brimstone: Best thirds, 7*l.* 2s. 6d.—Phosphate of Alumina, 3*l.* to 3*l.* 10s. per ton.—Pyrites: Spanish cupreous, 8½*d.*; non-cupreous, 9*d.* to 9½*d.*—China-clay: 18s. f.o.b. Cornwall.—Phosphates: High strength, 80 to 85 per cent., 1s. 4d. to 1s. 5d. per unit; Estramadura, 1s. 3d.; ordinary, 60 per cent., 1s.; precipitated phosphate of lime, 70 per cent., 5*l.* 5s.; super-phosphates, 80 per cent., soluble, 3s. 6d. per unit; 25 to 26 per cent., 3*l.* 10s.—Manganese: Ores, 115s. for 70 per cent.—Iron Ore: Hematite, 15s. to 22s. 6d.; puddling, 24s. to 27s.; oolitic, 8s. to 10s.—Iron: Scotch pig, warrants, 82s. to 83s.—Copper: Chili bars, 82*l.* to 83*l.*—Tin: English ingot, nominal, 96*l.* to 97*l.*; Straits, 93*l.*—Tin-Plates: Best Coke, I.C., nominal, 27s. to 34s.; Charcoal, I.C., 35s. to 41s. per box. M.I.C., 28s. 6d. per ton.—Lead: Best English soft pig, 23*l.* to 24*l.*—Antimony: French Star, 49*l.* to 51*l.*—Spelter: Silesian, 23*l.* to 24*l.*; English, 22*l.* 10s. to 23*l.*; re-melted, 22*l.* to 23*l.*, c.i.f., Grimsby, net cash.—Sheet Zinc: 28*l.* to 29, c.i.f., Grimsby, net cash.

Geological Society.—The next meeting of the Geological Society will be held at Burlington House, on Nov. 4. Papers to be read:—1. Notes on the Comparative Microscopic Rock-Structure of some Ancient and Modern Volcanic Rocks, by J. Clifton Ward, Esq., F.G.S.—2. The Glaciation of the Southern Part of the Lake District, and the Glacial Origin of the Lake Basins of Cumberland and Westmoreland. Second paper. By J. Clifton Ward, Esq., F.G.S.

Society of Engineers.—On Monday a paper will be read on "Tramway Rolling Stock, and Steam in connection therewith," by Mr. C. C. Cramp.

Wheal Peevor.—A very important discovery of tin has been made in this mine. The engine shaft has been sunk 5 fms. below the 48 fm. level, and during the first 4 fms. of this sinking the lode was worth about 50*l.* per fm.; but in sinking the last fathom the lode has greatly improved, and is now worth 100*l.* per fathom. During the last two months the mine has been about paying costs, but now the returns will be considerably increased. This is the best discovery of tin that has been made in the neighbourhood of Redruth for some time. There are about 40 tributers at work in other parts of the mine, and the pumping charges are moderate.

The Tin Standards.—The tin standards were advanced 2s. per cwt. on the 14th inst., and are now:—Superior common, 90s.; superior fine, 92s.

Cornish Mine Share Market.—The share market during the week has been inactive, and but little business has been transacted. The following are the closing prices:—Carn Brea shares, 56 to 58. Cook's Kitchen shares quiet at 9 to 9¾. Dolcoath shares close 46½ to 47. East Pool; a rumour is in circulation that Mr. Rule is going to bring over Mr. Henry Rogers, of Helston, to expound his views at the coming meeting; in absence of business shares are called 8 to 8½. East Lovell, 10 to 11. Providence shares are enquired for at 4¼ to 4½, and continue to be scarce. South Condurrow, 3 to 3¼. South Crofty dull, 9 to 10. South Frances are quiet, about 9; an attempt has been made to knock these shares down. St. Ives Consols called 7 to 8. A little business has been done in Tincroft from 29½ to 30. West Basset, 8 to 8¼. West Seton called 20 to 22. West Frances, 9 to 9½. West Tolgus called 68 to 70. Wheal Kitty (St. Ages), 5 to 5½. Wheal Uny shares are enquired for at 1⅞ to 2⅛. Wheal Peevor shares are in demand at from 3¼ to 3¾.—*West Briton.*

SOUTH STAFFORDSHIRE COLLIERY COMPANY.

REPORT OF THE DIRECTORS TO THE SHAREHOLDERS.

Since the time the directors had the pleasure of meeting the shareholders such satisfactory progress has been made in developing the property that they feel it incumbent upon them to give the shareholders the benefit of their knowledge, and they accordingly beg to send herewith a copy of the report made by their engineer and colliery manager.

The directors would specially point out the fact that, although in the prospectus originally issued it was stated that 1500 tons per week could be raised from the company's collieries, they have made such improvements and erected such powerful machinery that the manager estimates he can, from one pair of shafts alone, raise 2500 tons per week, and that when all the pits are in full working order this can be doubled. Should such prove to be the case (and your directors do not for one moment doubt it) the profits will far surpass the most sanguine expectations.

Coal is now being raised, and the weekly output is daily increasing at a rate proportionately large.

F. A. Oliphant, Sec.

TO THE DIRECTORS OF THE SOUTH STAFFORDSHIRE COLLIERY COMPANY.

Gentlemen,—I beg to hand you my report on the present position and future prospects of your South Staffordshire Colliery, situate at West Bromwich.

Progress Made.—On April 14 this year we cast the first soil, and have since then erected the following plant and machinery:—We have erected engine-houses, hovels, blacksmiths' shops, and other necessary works in the most substantial manner after modern principles. A pair of 22-in. diameter cylinder horizontal winding-engines, with 4 ft. stroke and 10 ft. 6 in. drum, with all the necessary appliances for its efficient working, have been duly erected, and are pronounced amongst the most powerful in the county. Two boilers, of the very best South Staffordshire plates, 36 ft. long by 6 ft. diameter, with all the most modern appliances for supplying the above engines, have been set. This also is a great accessory to the successful working of the engines, supplying both boilers with a full complement of water without interfering with the continuous working of the engines. These are of the most approved principles and of the best pitch pine, with pulleys 11 ft. diameter; the pit frames are 37 ft. high, and are unsurpassed by any in the district. This consists of a two-hearth shop, with all the necessary tools. The surface water that had accumulated in the shaft has been easily disposed of, and the workings are now perfectly dry, proving that this mine is never likely to suffer from any inconvenience in this way.

We are now raising coal out of the Ten-yard seam, and I must say that the quality of coal is equal to any I have ever seen in the district (and superior to most), in which I have spent the whole of my time as a miner. We have not only drained the water out of pits and workings, but we have laid bare several hundred yards of gate roads, and many acres of first class coal are ready for the market. These are good. I can with my present appliances raise 1000 tons per week, and gradually increase the output up to the capabilities of your present engines, which is equal to do as much as any in the district, and would amount to at least 2500 tons per week from your No. 1 or main pits. Here we are driving the colliery out in the ribs and pillars of thick coal; this looks well, and will turn out very productive.

I have much pleasure in stating, before closing this report, that I am firmly convinced you have one of the most valuable and productive properties in the whole county, and all that is required to raise it to the position of one, if not the highest dividend-paying collieries, is a continuance of the unceasing attention hitherto given it by the directors. I also take this opportunity of thanking the board for the manner in which they have always seconded my endeavours: and I am fully convinced that this report is considerably under rather than over estimated.

Dudley, Oct. 8. Elijah Davis, M.E.

The New Sharlston Collieries Company.—An extraordinary meeting of shareholders has been called, to consider the propriety of making some important alterations in the Articles of Association. The company was formed nearly a year ago, with a capital of 350,000*l.*, and a dividend was promised of at least 27 per cent. At the first half-yearly meeting a dividend of 5 per cent. was declared, and no account was taken of depreciation of stock and other expenses. There was a serious outburst of feeling amongst the the shareholders, and they appointed a committee to confer with the directors, with a view of putting the affairs of the company on a sounder and more economical footing. Four of the directors—Sir F. Williams, Bart., M.P., Mr. Gonaley, M.P., Mr. Isaac, and Mr. Ratcliff have retired from the board: and at the meeting to be held it is proposed to elect three members of the Committee of Inspection. At present the remuneration of the directors is 1000*l.* per year, and 2d. for every ton of coal raised at the company's collieries. It is proposed to limit the salary to 800*l.* a year. It is also proposed to rescind the resolution appointing Mr. S. Hart Isaac general manager, at 700*l.* a year, and the resolutions appointing the bankers and the solicitors. Other important changes are suggested, apparently with the intention of getting the control of the affairs of the company into the hands of the Yorkshire shareholders, by whom th bulk of the capital was subscribed.

MINING NOTABILIA.

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

Furze Hill.—On Friday 4 tons 2 cwts. 1 qr. of tin was sold for about 259*l.* This will leave a small profit.

Wheal Kitty and Wheal Margaret (Lelant) have just returned nearly 20 tons of excellent quality tin for the past month. These extensive concerns are now working together as an amalgamated company, and are among the most important mining undertakings in all West Cornwall.

At Wheal Owles (St. Just), in the Wheal Drea part, they have a fine masterly lode of tin at the 140 fathom level west, which is about 5 ft. wide. At this point good tin ground has been opened for 20 fms. in length; the whole of this will work at a good profit. As there is an extensive run of unwrought ground going west this may be regarded as an important discovery, and likely to lay open a large extent of workings.

Ambrose Lake Tin and Copper Mines (St. Neot).—A very valuable discovery is daily expected here by the cutting of the Great Wheal Mary Consols copper lode in the bottom cross-cut. There is much anxiety with the miners and others in the neighbourhood respecting it, inasmuch as it is confidently believed that the lode will be a rich and lasting one. Captain Peter Temby, the managing agent, has been most persevering and indefatigable in his exertions to place the mine on the Dividend List, and it is hoped that the time is not far distant when it will be the case.

Tregeagle Tin Mine (St. Neot).—This mine will be brought out as a limited company by Messrs. J. Taylor and Co., of London Wall, who a short time since purchased the concern for a large sum—there has been over 20,000*l.* worth of tin sold from a very shallow depth, and is now more than paying the working cost. Capt. Temby, of St. Neot, is to be the principal managing agent, who will have the best wishes of the neighbourhood for its success. It is reckoned to be an exceedingly good speculation

St. Neot.—Considerable interest has recently sprung up in this district by the discovery, made by Capt. P. Temby, of valuable clay on the lands of the Right Hon. Lord Robartes, to whom his lordship has granted a sett. A great number of acres has been laid open of the best quality clay, and it is believed that St. Neot will at no distant day rank second to the rich district of St. Austell. Other setts are being taken up by influential parties and capitalists.

New West Rosewarne Mine.—Owing to the failure, some months ago, of large shareholders, and the consequent forfeiture of shares, which the committee were unable to place under the Cost-book System, it has been determined to wind-up the present company, and sell the mine, machinery, and plant to a limited liability company, in 6000 shares of 1*l.* each, fully paid up. The price to be paid for the property, upon which upwards of 10,000*l.* have been expended, will not exceed 1500*l.*, and as no premium or promotion money whatever will be charged there will remain a balance of 4500*l.* working capital. The mine now bids fair, upon a comparatively small outly, of becoming highly remunerative. In driving the adit and 10 fm. level ore to the value of 3295*l.* 19s. 1d. was raised and sold, and in the 10 the lode was worth 40*l.* per fathom.

Bog.—At the meeting, on Wednesday (Col. Corbett in the chair), it was resolved to wind up voluntarily, the Chairman remarking that the general opinion seemed to be that the undertaking should not be carried on, for it was useless to continue to fritter away insufficient capital. Of the 10,000 shares required to be placed to provide the capital necessary to make the company a success less than half had been applied for by the shareholders, they could, therefore, only propose that the mine be wound-up. The last sale, 60 tons, was made at 14*l.* 7s. 6d. per ton, which realised more than it cost, and the next two months' working would add something to their assets; they could not, however, go on opening the mine with less than 1200*l.* per month, and the returns gave them but 750*l.* per month. Mr. Bentley, in seconding the resolution, expressed his continued confidence in ultimate success, and his willingness to go on if arrangements were made to find the necessary capital. He remarked that Lady Lyster would give every encouragement to carry on the concern by waiving dues for two years, or until the company pays a dividend, to facilitate the development of the property. The Chairman said that there were people in the country who would carry on the mine. It was a fine property, which would not be left idle, but it had always been starved for capital, and was now starved to death. It had never had the money necessary to work it properly, or would long since have been profitable. Mr. Alfred Good was appointed liquidator, and Mr. Lowndes (solicitor) stated that the winding-up could at any moment be placed under the supervision of the Court, but that the Court would not be applied to except to prevent the property being taken in execution. The Chairman hoped that the mine might be sold as a going concern, but the liquidator would no doubt do his best for all concerned. The proceedings then terminated.

A petition to wind-up the Tecoma Silver Mining Company has been presented to the Court of Chancery.

TENDERS FOR STORES.

THE CARDIFF AND SWANSEA SMOKELESS STEAM COAL COMPANY (LIMITED), are prepared to RECEIVE TENDERS from manufacturers for the SUPPLY of OILS, GREASES, TALLOW, CANDLES, STEEL, FILES, CHAINS, ROPES, BLASTING POWDER, SHOVELS, RAILS, IRONMONGERY, HAY, OATS, BEANS, BRAN, HORSE HARNESS, TIMBER, SMALL SLEEPERS, &c., &c., in such quantities as they may require from 1st November next, delivered free at their stores.

For further particulars and forms of tender apply to the Secretary, 6, Great Saint Helen's, London, E.C.

Tenders to be endorsed "Tenders for Stores."

The company do not bind themselves to accept the lowest or any tender.

By order, JOHN DAVIES, Secretary.

ORES, &c.

I BUY at the highest prices:—

LEAD ORES.—LEAD-SILVER ORES.—SILVER-LEAD ORES.

SILVER-LEAD.—HARD LEAD.—ANTIMONIAL LEAD.

GOLD AND SILVER ORES.

ZINC AND LEAD ORES MIXED TOGETHER.

Particulars by letter.

ARMAND FALLIZE, Ingénieur, à Liége (Belgium)

SALT LAKE CITY, UTAH TERRITORY, U.S. AMERICA.

WILLIAM BREDEMEYER,

MINING AND CONSULTING ENGINEER,

U.S. MINERAL SURVEYOR.

Particular attention paid to Underground Surveys.

OFFICE,—KIMBALL BLOCK, SALT LAKE CITY.

D. ERNEST MELLISS, A.M., Ph.D.,

MINING ENGINEER AND GEOLOGIST,

52, BROADWAY, NEW YORK, UNITED STATES,

EXAMINES and REPORTS upon MINERAL and other LANDS, MINES, ORE BEDS, &c., either in or out of the United States.

Information furnished in regard to any of the American Mining Districts. Dr. Melliss has had special experience in the Silver and Gold Mines west of the Rocky Mountains, and in the Coal and Iron Region of the Southern States.

Refers by permission to—W. Butler Duncan, Esq. (Duncan, Sherman, and Co.), New York; L. P. Morton, Esq. (Morton, Bliss, and Co.), New York; Mark Brumagim, Esq., President Mariposa Mining Company; James B. Hodgskin, Esq., Prest. U. S. Rolling Stock Company; Charles A. Joy, Ph.D., Prof. Chemistry, School of Mines, New York; Friedrich Wöhler, Ph.D., Prof. Chemistry, Univ. Göttingen; Sartorius v. Waltershausen, Prof. Geol. and Min. Univ. Göttingen; Walter Williams, Esq., Creswell Hall, Stafford, England; John J. Cisco, Esq. (John J. Cisco and Son), New York; S. L. M. Barlow, Esq., New York; C. P. Huntington, Esq., Prest. Chesapeake and Ohio Railway; Charles F. Chandler, Ph.D., Prest. New York Board of Health; J. A. Newberry, M.D., Prof. Geology School of Mines, New York; Rudolf Fittig, Ph.D., Prof. Chemistry Univ. Tübingen, Würtemberg.

CAPPER PASS AND SON, BRISTOL

ARE PURCHASERS OF

ANTIMONIAL or HARD LEAD, LEAD MATTE, LEAD SLAGS, LEAD ASHES, SULPHATE OF LEAD, COPPER SLAGS, COPPER REGULUS or MATTE, TIN ASHES, and TIN SCRUFF.

MIXED METALS and DROSS, containing LEAD, COPPER, TIN, or ANTIMONY.

CAZIN'S COMBINATION ORE-SIZER AND CONCENTRATOR ONE-PLUNGER SYSTEM.

In ONE machine—a complete system of ore concentration, when added to a battery of stamps.

Covered by Letters Patent of July 2nd, 1872, and recent application.

This machine contains a sizing apparatus (revolving screen), delivering four sizes of ore to four rows of sieves, each row concentrating according to specific gravity—the sized ore furnished by the sizer. Each row contains five sieves, end to end, on which the ore is submitted to the concentrating action long enough to prevent loss of valuable parts. The machine, continuously fed, works second and third class ore into first-class ore, of perfect cleanness, in automatic action, and simultaneously in four grades or sizes. It thoroughly separates native gold or copper from quartz or any other lode matter; galena, silver and silver sulphurets and pyrites from quartz; galena from baryta or pyrites, and pyrites from quartz. Added to a battery of stamps, this machine constitutes a complete system of ore concentration, sufficient for the requirements of most Western mines, with a capacity of 15 to 20 tons per 24 hours. The same machine is made for working two sizes at the time.

For particulars, apply to F. M. F. CAZIN, M. and C.E., Lock box 2225, Denver, Colorado, United States, America.

COLLIERY MANAGER WANTED.—The Directors of POWELLS' LANTWIT COLLIERIES (LIMITED) are prepared to APPOINT a RESIDENT MANAGER at their PITS, near Llantrissant. He must speak Welsh, have a thorough knowledge of Colliery work, Plans, and Accounts, and an acquaintance with the Lantwit district will be considered an advantage. Liberal terms will be given to a suitable person.

Applications, stating age, experience, and salary required, to be sent to the Secretary of the Company, No. 7, Poultry, London, E.C.

MANAGER WANTED for an IRON and STEEL WORKS in an ENGLISH COLONY. Should have a good practical knowledge of the Manufacture and Working of Iron and Steel. Must be a gentleman possessing commercial knowledge, and competent to fill a position of responsibility involving large interests.

Apply, by letter only, with testimonials (copies only), stating salary required, to "J. B.," care of Messrs. Kingsbury and Co., 11, Clement's-lane London, E.C.

A PRACTICAL MINING ENGINEER WANTED, to VALUE COAL BEDS in DENBIGHSHIRE, NORTH WALES.

Say terms, and send copies of testimonials, to "Mining," care of W. H. Smith and Son, Advertising Agents, Dublin.

WANTED, by a Gentleman, who has had some years experience in Mining (and who will be disengaged in January), an APPOINTMENT as RESIDENT SECRETARY to a MINE. Satisfactory references.

Address, "A. B.," Mining Journal Office, 26, Fleet-street, London.

WANTED, SITUATION as COMMERCIAL MANAGER, SALESMAN, or CASHIER, by a Gentleman of experience in the Coal Trade. Would not object to take a London agency. Good references, and security if required.

Address, "L. P. D.," Post Office, Barnsley.

WANTED, by a Young Man, a SITUATION, at home or abroad, as DIALLER, MAPPER, and ACCOUNTANT, with a slight knowledge of Assaying, and is a thorough Practical Miner. Good reference.

Address, "X. Y. Z.," Post Office, Tavistock.

ISSUE OF £200,000 STERLING,

IN SEVEN PER CENT. FIRST MORTGAGE BONDS TO BEARER,

OF THE

LITTLE ROCK BRIDGE COMPANY.

NOTICE IS HEREBY GIVEN, that the LISTS of APPLICATION for the above will be CLOSED on WEDNESDAY next, the 4th November, for LONDON, and THURSDAY next, the 5th November, for the COUNTRY.

GEORGE BURNAND AND CO.

69, Lombard-street, E.C., London, October 30th, 1874.

MR. J. S. MERRY,

ASSAYER AND ANALYTICAL CHEMIST,

SWANSEA.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Oct. 15	Nant-y-Iago	20	£13 16 6	Walker, Parker, and Co.
	Bwlch-y-Plwm	50	13 10 0	Runcorn Smelting Co.
21	East Llangynog	20	14 0 0	Panther Lead Company.
22	New Llangynog	20	14 0 0	ditto
	Llanrewmbach	10	14 5 6	ditto
23	Minera	70	14 8 6	Adam Eyton.
	ditto	22	14 5 6	Mill Dam Company.
	ditto	49	14 10 6	Walker, Parker, & Co.
	ditto	20	14 5 0	ditto
	ditto	20	14 5 0	Panther Lead Company.
	ditto	9	14 4 0	Walker, Parker, & Co.
24	Powell Consolidated	31	14 8 6	Adam Eyton.
	Lisburne—Glogfawr	50	15 5 6	Panther Lead Company.
	" —Frongoch	60	13 18 6	Burry Port Company.
	Goginan	20	18 18 0	Adam Eyton.
28	Bog	60	14 7 6	St. Helen's Lead Co.
	Pennerley	80	14 6 0	Nevill, Druce, and Co.

BLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Oct. 23	Minera	75	£ 3 9 0	Bagillt Company.
	ditto	39	3 7 6	Richardson and Co.
	ditto	28	3 1 6	Tindale Company.
	ditto	20	2 15 6	Bagillt Company.
	ditto	20	2 15 6	ditto

BLACK TIN.

Date.	Mines.	Tons	c.	q.	lb.	Price per ton.	Amount.	Purchasers.
Oct. 17	So. Wh. Frances	9	17	0	14	£58 0 0	—	—
	Pedn an drea	17	19	2	18	58 2 6	1045 5 3	Carvedras.
23	Furze Hill	4	2	1	0	—	£ 259 0 0	—
24	Blue Hills	5	2	1	18	—	383 7 10	Daubuz.
	Wheal Uny	16	14	2	5	55 10 0	929 0 1	Redruth Co.
27	Wheal Lucy	0	9	2	9	—	—	—
	ditto	0	1	3	14	—	—	—

Bampfylde Copper Mining Company.—We regret to learn that, in consequence of his impaired health, Capt. Samuel Mitchell has been compelled to resign his appointment at this mine.

Notices to Correspondents.

*** Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be *filed* on receipt; it then forms an accumulating useful work of reference.

Colliery Enterprize.—Referring to the article on Coal Mining in the Rhondda Valley, published in last week's Journal, it would be interesting if some of your readers would give additional particulars on the subject. I fancy that several coal mines in Lancashire could be pointed out that wind much more than 1041½ tons per the 12 hours.—Information.

Sir,—Can any of your readers inform me where the washing and roasting of iron ores can be seen in operation; say of ores of the character of those of the Forest of Dean?—A Subscriber: *London, Oct.* 28.

West Jewell.—As there is now no quotation nor appearance of West Jewell in the Share List, and as reports have been discontinued in the Journal, am I to infer that the mine has, like many others, collapsed?—A Subscriber.

Transfer of Shares.—What is the length of time usually taken up by share-brokers in getting shares transferred? I have transacted business with two or three dealers who advertise in the Journal, and have had generally to wait a long time in getting the transfers, although the contract notes have invariably come to hand without delay. I have not yet received transfers for shares contracted for in the *middle of August*. Is this the usual mode of doing business?—X. Y. Z.

Elementary Work.—"X. Y. Z."—It is impossible to "recommend the best elementary work or students' guide for a youth who has just entered a coal and ironstone office" without knowing what the youth thinks of doing. As to coal mining, Hopton's "Conversations on Mines" (3s.), which can be forwarded from our office, is as good as any. As to the management of blast-furnaces and smelting, the best elementary book is Greenwood's "Metallurgy" (2s. 6d. per volume), in Collins's Advanced Science series. Only one volume has yet been published, and the whole series is being issued so slowly that it is very uncertain when the other volume of Greenwood's will be ready.

Mine Ventilation.—"U. M." (City).—The secretary of the Society of Engineers (Mr. Perry F. Nursey) informs us that no paper on Mine Ventilation, by Mr. Roots, has ever been read before that society; but states that if it be the Mr. Roots so well known in connection with Roots's Blower, whose address "U. M." is seeking, a letter addressed to him, care of Messrs. Thwaites and Carbutt, Vulcan Ironworks, Bradford, will reach him.

Steatite.—One of your numerous correspondents would greatly oblige by informing me the commercial value of soapstone (steatite), and who would be the probable purchasers.—Inquirer.

Share Dealing.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

The Supplementary Sheet.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

Received,—"W. L."—"W. A. H." (Hammerwich): As requested—"B."—"R. S.'—"J. H." (Geelong)—"T. H."—"K. S."—"A. R."—"W. T. J."—"Shareholder" (Van Consols)—"W. J." (Italy): The report may be true, but we have not heard of the event—"J. T.": Next week—"W. F. B."

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, OCTOBER 31, 1874.

THE DISPUTES IN THE COAL TRADE.

The present state of the coal trade in some of our most important mining districts has a most unhealthy appearance, and it is to be feared that we must look forward to a constant disturbance of the friendly relations which formerly existed between our colliery owners and their workmen. Almost from the time of the advance in the price of coal, about three years ago, there has been few of our coal-producing counties free from strikes, whilst of late there appears to have been a succession of them, for no sooner is a breach healed in one place than a stoppage of work takes place in another. This has had the effect of keeping up the price of coal to a much higher point than it ought to be, and so not only taxes the public generally from the highest to the lowest, but also seriously interferes with our most important industries. This is more particularly the case with respect to our iron and steel trades, and which will be at once apparent when we state that no less than 40,000,000 tons of coal are annually consumed in the reduction of our metals, and that the total required for all our manufactures and for steam is now about 88,000,000 tons. A serious responsibility, therefore, rests upon those who, without seriously weighing the consequences, take the initial steps in lessening the production of fuel, the great lever which keeps all our vast hives of industry in full operation, and finds employment for hosts of able and willing workers. Real necessity can only palliate such a course. We care not to enquire where the blame rests, whether with the masters or the workmen; but the truth is that strikes are now becoming of too frequent occurrence, and it may be that a little blame is to be attached to both the parties interested. High prices of coal are, certainly, an immediate advantage to the mineowner, and that is all, for the experience of last year clearly showed that where very large profits were made there was a great rush to get into the trade, so that just now in all parts of the kingdom new collieries are being opened out that in a very short time will probably be the means of permanently bringing down prices of coal to something like the standard in force at the close of 1871. This will also be the means of bringing down the wages of the miners. In the interests of the country it is essential that there should be some limit to the cost of coal, as well as to the remuneration paid to those who raise it. The competion to which our iron-masters and manufacturers are subject from foreigners at the present time, when they are not only being driven out of several markets, but when iron from abroad is being imported into the very heart of our iron and steel making districts, is one of the results of dear fuel. Consequently it is the duty of coalowners to assist those engaged in the iron trade in maintaining the supremacy they have so long held in the markets of the world. If they do not, then they must ultimately be sufferers, for the prosperity of the iron-master is prosperity to the colliery proprietor, seeing that the former is the largest consumer of fuel we have, taking yearly about one-third of all that is raised.

The great question, then, with respect to such strikes as those in the Wigan district and in West Yorkshire is, has coal fallen so low as to require a reduction of the wages of the men? But before going into the matter we must look to the advances made to the colliers since coal increased in value from about October, 1871. In one of the principal districts in the West Riding of Yorkshire we find that the increase in the wages from the time stated up to July last had been 57½ per cent., from which 12½ per cent. has since been taken off. This leaves the men with a clear increase of 45 per cent. over the wages of October, 1871, and that we believe may be taken as a fair estimate of what has been conceded in nearly all other districts in the country. Now, to put the advance and decline in the price of coal in juxtaposition with the same condition of wages is no easy matter, for the charge of the former varies much, not only as regards quality, but as to thickness, and the ease, or otherwise, with which it had been raised. In some places coal is very hard indeed, and the work of cutting very laborious, whilst in others, as in South Wales, it falls with the greatest ease. Our best guide in all probability will, therefore, be to take the price of coal exported from the various ports in the United Kingdom. If we take the month of September for the last three years we shall find the price to be in 1872 no less than 21s. per ton, in 1873, 20s. 7d. per ton, and in 1874 only 15s. 11d. per ton. This shows a very great falling off as compared with the reduction of wages. If we take the nine months ending September of the last three years the price of coal exported shows a still greater discrepancy, for in 1872 it was only 14s. 3d. per ton; in 1873 it had increased to 21s. per ton, and in 1874 it had fallen to about 17s.10d. per ton. Much has been made by miners and their leaders with regard to the prices charged to consumers in London, as the prices are advertised in all the daily papers; but it should be remembered that the large profits sometimes made do not go into the pockets of the colliery owner, but in nearly all instances into those of the merchants. Taking the coal brought in shiploads and delivered into barges or wharfs on the Thames, including the tax of 1s. 1d. paid by the seller, the average prices were—in 1868, 18s. 6d.; 1870, 18s. 6d.; 1872, 24s. 11d.; and 1873, from 31s. to 33s. per ton, whilst at the present time the prices range from 26s. to 26s. 6d. per ton. In October, 1872, the price of the best coal delivered to consumers in the metropolis was exactly what it now is, 34s. per ton—being much higher than during any month of the year. The advance of late has been the result of the strikes, which has diminished the production considerably, and led consumers to stocking in expectation of prices still rising. The miners would do well to digest the above plain truths, and so thoroughly examine the coal question in all its bearings, for the purpose of determining whether or not they are to submit to any reduction of wages on the ground of the price of coal having gone down lower than the price of labour. The question is one in which the public is much interested, and certainly cannot be considered of a private character, for so long as the present strikes last, so long will the public have to pay an extra tax for their coal.

MINING AND TECHNICAL EDUCATION.

The necessity that exists for educational establishments in all our principal mining districts where students could be thoroughly trained in those scientific branches qualifying them to take the entire management of mines is too obvious to require comment. Persons acquainted with our colliery districts in particular know full well that many of those who occupy the position of managers holding certificates of service would be unable to pass the examination now required by the Act of 1872 by a person who could not claim under the 31st section of it, as having been a manager for twelve months before the passing of the Act. It is also well known that a great many of the present managers have been raised from the ranks of the miners, and, however, well qualified they may be from practical experience still they are deficient in that scientific knowledge relating to the nature of gases, pneumatics, chemistry, mechanics, experimental physics, &c., that should be understood by a person who has the management of a mine, and to whose charge is confided the lives of hundreds of men. Where there is such a great responsibility there ought to be a thorough acquaintance with everything of a practical and scientific character calculated to ensure the safety of those working underground, and almost in darkness. When looking at the fearful death list from explosions at our collieries, one cannot help thinking of how many of those terrible catastrophies which have swept with the rapidity of lightning scores and hundreds into one common sepulchre were the result of ignorance and of neglect. Coroners' juries even of late have testified to the want of efficient management having resulted in the deaths of many miners, whilst owing to the requirements of the last Act of Parliament there has been a great scarcity of properly qualified persons to fill the position of colliery managers.

In no part of the kingdom more than in Yorkshire—so well known for its terrible explosions and wholesale loss of life—is a Mining School more required, and we are glad to be able to state that the want is now about to be supplied. On Monday last there was opened in Leeds an institution called the Yorkshire College of Science, having for its objects, *inter alia*, instruction in those sciences applicable to mining, engineering, and manufacturing, having professors to instruct in all that relates to them. A professor of geology has been appointed in the person of Mr. A. H. Green, M.A., who has long been connected with the Government Survey, and who, in connection with Mr. Dakyn and Mr. Warde, made the survey of the Yorkshire coal field, and, by himself, the geology of the carboniferous rocks and the Permian and Triassics of the Tadcaster district. No better appointment could have been made, for Mr. Green has been indefatigable in his researches, and was for a long time stationed at Barnsley, which is undoubtedly the most important portion of the Yorkshire coal field. We understand, however, that a Professor of Mining has not as yet been appointed, but such is now about to take place, a fund of at least 8000*l.* being required to endow the professorship. The Low Moor Company have promised the very liberal subscription of 1000*l.*, which is given in the event of a fund of at least 8000*l.* being raised by the West Riding colliery owners, it being considered that such a sum, with the students' fees, would be sufficient to adequately remunerate the person appointed. The Bowling Company have given 500*l.*; Messrs. Charlesworth, 500*l.*; the Farnley Company (in addition to 500*l.* to the general fund), 250*l.*; the Manstone Coal Company, 250*l.* (in addition to 250*l.* by Messrs. Hive and Tennant); Messrs. Briggs, Pope, and Pearson, the Sharlston, West Yorkshire, and Garsforth companies have also given like sums. From the admitted liberallity of the colliery owners of the West Riding, there can be no question but that a very large sum will be raised for endowing a Professorship of Mining, and that in the end it will be to their advantage by raising up a class of men thoroughly competent to undertake the management of their collieries, and which will also raise the *status* of the general body of managers of mines. The College of Science will also be of incalculable benefit to many who are even now studying mining under considerable disadvantages, and we have, therefore, every reason to believe that it will be eminently successful.

A BELGIAN INDUSTRIAL COMPANY.

It may be interesting to enter into a few particulars illustrating the position and operations of one of the leading industrial undertakings of Belgium—the John Cockerill Company. The accounts presented to the annual meeting of the company, on Wednesday, showed that the balance of profit realised for 1873-4 amounted to 158,524*l.* The corresponding profit for 1872-3 amounted to 183,442*l.*, the difference resulting principally from the valuation of the stocks on hand June 30, 1873, and June 30, 1874. Including rents and some other accessory items, the total balance of profit for 1873-4 was 161,475*l.* This result was obtained from an aggregate of 1,083,471*l.* of sales and 524,288*l.* of purchases, making a turnover for the year of 1,607,759*l.*, as compared, with 1,453,622*l.* in 1872-3. The shareholders at the general meeting of 1871 ordered sundry new works, and these are now beginning to be brought into profitable working. Thus the first of some new blast-furnaces for the production of cast-steel has just been lighted; and a second will soon be brought into working. Four new converters have been in activity for some weeks past, and sundry new coke furnaces are in operation. It is the same with the Hoboken shipyard, belonging to the company, which has commenced the construction of two steamers, of the value of 80,000*l.* All these new appliances and sources of future profit have not yet, however, become fully productive, and did not make any material contribution to the profit realised for the 12 months ending June 30, 1874.

Although the apparent balance of profit for 1873-4 was 161,475*l.*, the balance available for dividend upon the company's shares was reduced by sundry deductions made in terms of the statutes to 82,873*l.* This balance admitted of the distribution of a dividend of 5*l.* per share, which will be paid Nov. 3. The business done by the company in 1873-4 was larger than had been at one time hoped and expected. Thus, in the autumn of 1873 the aggregate value of the work which the company had on hand for execution was reduced to 270,360*l.*; under these circumstances, the total production effected by the company in 1873-4—a production represented by an aggregate of 1,565,282*l.*—was not hoped for. It may fairly be expected, then, that the company's operations will experience a considerable further development when business transactions have become more numerous, when the prolonged crisis which has effected industry at length passes away, and when the new steelworks and the Hoboken shipbuilding yard are in full activity. The working staff of the company was well maintained, upon the whole, last year; at the close of June, 1873, it stood at 8810; at the close of June, 1874, it had grown to 9036, although it had receded in the first week of October, 1874, to 8587. Wages were maintained at about the same level during 1874 as in 1873; thus the amount paid away by the company for labour during the 12 months ending June 30, 1874, was 403,351*l.*, as compared with 383,501*l.* in the year ending June 30, 1873. In the first quarter of the financial year 1874-5 the expenditure made by the company for labour was also somewhat in excess of the corresponding outlay in the corresponding three months of the financial year 1873-4, the totals having been 102,632*l.* and 101,064*l.* respectively. The company's consumption of combustible in 1873-4 was about 50,000 tons less than in 1872-3, in consequence of the extinction of furnace No. 6 during the year; the consumption still stands, however, at about 1000 tons per working day. The motive force employed by the company last year was estimated at 7800-horse power, represented by 258 engines. All these statistics show that the activity of the company's works scarcely slackened during the past financial year, notwithstanding the somewhat gloomy prospect which the order-books of the undertaking presented in the autumn of 1873. It may be hoped that the present activity in the works will experience no check, as the order-books are now better filled than they were 12 months since, the value of the commands in course of execution being estimated at 270,360*l.* Oct. 4, 1873, and 385,720*l.* Oct. 4, 1874. This last comparison is certainly remarkably encouraging, as it shows that the John Cockerill Company has emerged satisfactorily from the trying ordeal through which it has had to pass during the last few months. As its name implies, the John Cockerill Company is of English origin, and no doubt English probity and English good sense laid the foundations of the importance and, at any rate comparative, prosperity of the existing undertaking. At the same time, Belgian thrift and industry have contributed in no small degree to that importance and prosperity.

LOCOMOTIVES, AND COLLIERY WORK.

The increased application of steam power to colliery purposes merits all the attention that is being given to it. While coal mining was only in its infancy the cuttings did not extend far from the shaft, and the mineral had to be dragged in sledges along the somewhat slippery floor of the seam, or wheeled in barrows along a barrow-road, but the development of civilisation, and its attendant science, gradually ameliorated such primitive means, and now locomotive engines as a means of supplying haulage power in the underground workings are being substituted for horses, or even the winding-rope. The practicability, under certain conditions, of steam power so applied needs no enunciation from us, and that that practicability is much increased in working the thicker seams is hardly disputable. Of course the ventilation of the pit and the condensation of the exhaust steam have to be considered, but those are difficulties to be overridden by mechanical skill and diligent watchfulness. It is self-evident, however, that they must be overridden before general practicability is attained, and we agree with the author of the paper on "Locomotive Engines for Collieries," summarised elsewhere in our columns, that for a colliery whose workings will admit of some demand being made upon its resources for ventilation the ordinary condensing locomotive, as used upon our metropolitan lines, might possibly be applied. But it could only be applied in exceptional cases. The "fireless" locomotive seems much more adaptable, and capable of being worked with greater economy. The patented arrangement of Dr. Emile Lamm, of New Orleans, is being adopted there for tramway purposes, and, on a high authority, has been pronounced able to conserve, when used on light gradients, as much as 33 per cent. We have no doubt whatever that even underground the locomotive might be used to a larger extent than at present, but that it could be more frequently adopted upon the surface is much more capable of demonstration. The remarks of the President of the Dudley Mining Engineer's Institute (Mr. Blakemore), at the close of the reading of Mr. Tatlow's paper in Wolverhampton, were only true when he said the subject was one of vast importance' and that engines, whenever possible, should supersede horse or manual labour.

The great and growing expense of the maintenance of horse power at our collieries demands that a substitute should be found. We are of opinion that mining engineers have not sufficiently gone into the question of economy in the use above ground of the locomotive. The immense machines that we are accustomed to see upon the trunk railways, and which only too often are noticed running upon our collieries, are not a necessity, nor are they in all cases by any means the cheapest that could be adopted. Enough attention has not yet been given to the engineers who have again and again brought under the notice of those who require such a machine what has been well termed the tiny engine, of very narrow gauge. Such an engine is amenable to economical use where the more massive locomotive would be as unwieldy as it is expensive.

The locomotive of the future, which will do a large amount of good service to the colliery world, will be traceable from those handy little fellows which first began their career upon the Festiniog Railway. We all know how much we are indebted to the little mountain pony in our collieries, and how he can do that excellent work which the finest and most costly drayhorse might try in vain to accomplish. Let our mining engineers begin to exercise as much faith in the diminutive locomotive as they have good reason to repose in the mountain pony; and, the question will then have taken a start, that will inevitably lead to immense benefit at our collieries. An excellent little engine upon the Fairlie principle has been designed for the Glasgow and Cape Breton Railway. The line is twenty miles long, and has been constructed almost entirely to carry coal traffic, the traffic being full wagons to the coast with return empties. The ruling gradient is 1 in the 100 against the load, and the average load up this grade is between 50 and 60 wagons fully loaded, or a gross load of about 350 tons, exclusive of the engine. They have been working this most satisfactorily for some time past, and further extensions are contemplated on the same principle. Owing to the severity of the weather the line can only be worked for about eight months in the year, so that all the coal got in the twelve months has to be carried in the former period.

A small engine capable of drawing 70 tons over a curved line, having gradients of 2 in 35, would supersede on a colliery line eight or nine miles in length some 30 horses. That this is so would seem to be almost demonstrated by what is now being done in the goods yards of the North-Eastern Railway Company, where such an engine, made by Messrs. Manning, Wardle, and Co., has displaced more than 30 horses in shunting. Though the first cost of steam as compared with the horse haulage may be against the former, yet in the course of years there would be a considerable margin of saving in favour of the locomotive. We hope that we have said enough to occasion more thought to be given to the subject by our colliery engineers.

THE METALLIFEROUS MINES REGULATION ACT, 1872.

Rock-Salt Mines.—At the Petty Sessions at Leftwich, near Northwich, Cheshire, on Tuesday, Oct. 27, proceedings were taken against Messrs. John Thompson and Son, Messrs. Joseph Verdin and Sons, and Mr. William Steenstrand, for contraventions of the Act at their respective rock salt mines, situated at Platt's Hill, Adelaide Marston, and Wincham. It appeared that in the year 1873, soon after the Act came into operation, a meeting of the mineowners was held at Northwick, when the provisions of the Act were explained in detail by the inspector, Mr. Dickinson, and that since that time, on the occasion of making visits and by letter, he has had to repeat the explanation and point out formally the necessity of compliance. The Act being new to them, and the above-named owners having apparently had their time occupied with other matters, the requirements were allowed to remain unattended to, until the present proceedings were instituted. The result has been not only the enforcement of mitigated penalties and costs, but it was also stated that all the matters complained of were now remedied, and that every care would be taken in future to ensure compliance. The cases consisted of three for not keeping the required register of boys, &c.; two for permitting gunpowder to be taken into the mines in casks containing from 20 lbs. to 80 lbs., instead of in cases or cannisters not exceeding 4 lbs. each; one for not having the abstract of the Act posted up where it could be conveniently read by the workpersons; and for not having the indicator to show the position of the load in the shaft attached to the engine used for raising and lowering persons. Before the Act came into operation it was stated that it was the practice in all the rock-salt mines, both in Cheshire and Ireland, to store the gunpowder in the mines, there being often 1 ton, and occasionally 2 or 3 tons, below ground.

and that the miners were accustomed to use it out of a barrel. The innovation introduced by the Act was not accepted all at once, but demur was made through the Rock-Salt Chamber of Commerce, and the responsibility of making the change of storage from below ground to magazines on the surface, if enforced, threatened to be cast upon the Government. Ultimately, however, magazines were built on the surface, where the powder is now stored—there being no power in the Act to allow storage below ground. The present proceedings, it is hoped, will weed out from amongst the miners the lingering attachment to an old custom, and the general use of the modern and recognised safer mode.

COAL AND IRON IN THE UNITED STATES.—The anthracite coal movement of Pennsylvania to Sept. 26 this year was 13,450,659 tons, against 14,759,075 tons in the corresponding period of 1873, showing a decrease of 1,358,416 tons this year. The bituminous coal movement of Pennsylvania to September 26 this year amounted to 2,441,658 tons, against 2,362,987 tons in the corresponding period of 1873, showing an increase of 78,671 tons this year. In the course of last year the Toledo, Wabash, and Western Railway Company laid down 6242 tons of steel rails, at a cost of $697,243. The track is stated to have been remarkably well kept up last year, and the company has run a train daily between East St. Louis and Toledo, a distance of 432 miles, in 14½ hours, since August, 1873; this is regarded as a remarkably high speed for the United States, and it would, in fact, be a very good speed for any country. The Pennsylvania Railroad, crossing the great watershed between the waters of the Susquehanna and the Ohio, is laid upon an almost continuous bed of coal until the Ohio river is reached at Pittsburg.

GOLD PRODUCTS OF VICTORIA.—The reports of the Government (of Victoria) mining surveyors and registrars for the quarter ending June 30, 1874, have been published. They estimate that 271,839 ozs. of gold were obtained during the quarter, of which 106,934 ozs. were alluvial gold and 164,905 ozs. quartz gold. The amount actually exported during the quarter was, according to the Customs returns, 233,272 ozs. The number of miners employed on the gold fields during the quarter was estimated at 46,488, of whom 18,467 were Europeans and 12,484 Chinese engaged in alluvial mining, and 15,432 Europeans and 105 Chinese engaged in quartz mining. The approximate value of all the mining plant employed was 2,074,972*l.*; the number of square miles of auriferous ground actually worked upon, 1016; and the number of distinct quartz reefs actually proved to be auriferous, 3367. The miners were distributed over the seven districts into which the colony is divided in the following proportions:—Ballarat, 10,294; Beechworth, 6657; Sandhurst, 7463; Maryborough, 8687; Castlemaine, 7253; Ararat, 3554; and Gippsland, 2580.

CHILI AND BOLIVIA—SILVER MINES.—According to the South-American advices now to hand, the adjustment of the boundary dispute between Chili and Bolivia will have the result of giving the latter state the greatest immediate material benefit, since it obtains the entire possession of the rich Caracoles Silver Mines, included in the territory between the 23rd and 25th parallels. These mines, it is alleged, yield upwards of $2,000,000 a-year in export duty, while their value is steadily on the increase, "six of the principal ones yielding, on an average, the enormous quantity of 50,000 marcs of silver every month, and good ore having been found in the lower regions, after passing the first barren strata." The importance of this fact to the bondholders is pointed out by the local journals, the inviolability of the engagements undertaken by the Republic towards her external creditors being apparently recognised as beyond all question. Chili is to receive an indemnity for the surrender of these mines, the amount to be settled by arbitration, as well as the mode of payment. On the other hand, the Mejillones guano deposits, "now at a standstill for more than a year as regards work and exportation," are to be divided, Bolivia recognising the Chilian claims to the extent of one-half the net yield.

REPORT FROM LANCASHIRE AND CHESHIRE.

Oct. 21.—The position of affairs with regard to the great strike of West Lancashire colliers remains unaltered, and there is to-day no better prospect of a settlement than at the commencement of the month. Perhaps the most remarkable feature concerning the struggle is the dogged obstinacy which prevails on both sides. Contrary to all expectation, the men, although without any material support from their Union, are apparently maintaining themselves pretty comfortably, and their behaviour as a body is certainly most commendable, especially in the immediate neighbourhood of Wigan, which in previous strikes has been notorious for its scenes of violence.

There are certainly crowds of idlers at the street corners, and some begging is going on, but there is no disturbance, and the groups are generally very good humoured. On the employers' side the determination to fight the matter out seems confirmed, and there are no indications of any giving way. The loss to the district cannot be measured; the stocks of coal are well nigh gone, and the trade is being absorbed by other coal fields, to some of which the strike seems very acceptable. The shipping trade is exceedingly dull, very few vessels are being chartered from Lancashire collieries, and the supplies offered from outside districts are generally at rates which are considered too high for shipment.

There is nothing of importance to report concerning the iron trade of the district, business continues firm, especially in the department of manufactured iron, producers of which are fully occupied.

REPORT FROM SCOTLAND.

Oct. 28.—The Pig-Iron Market has been exceedingly steady since the date of our last report, the price of warrants remaining betwixt 82s. and 82s. 6d. up till Monday last. Yesterday there was rather a firmer feeling, and a good business was done in warrants up to 83s. To-day there has been more eagerness shown to buy iron, and warrants have advanced to 83s. 9d. and 84s., and makers' iron is firm at the undernoted quotations:—

			No. 1.	No. 3.
G.m.b. at Glasgow (deliverable alongside)			89s. 0d.	79s. 0d.
Gartsherrie	ditto	ditto	102 6	83 6
Coltness	ditto	ditto	105 0	83 6
Summerlee	ditto	ditto	98 6	80 0
Carnbroe	ditto	ditto	94 0	80 0
Monkland	ditto	ditto	89 0	79 0
Clyde	ditto	ditto	89 0	79 0
Govan, at Broomielaw		ditto	89 0	79 0
Langloan, at Port Dundas		ditto	105 0	82 0
Calder	ditto	ditto	102 6	83 0
Glengarnock, at Ardrossan		ditto	96 0	81 0
Eglinton	ditto	ditto	87 6	79 0
Dalmellington	ditto	ditto	88 0	78 6
Carron, at Grangemouth, selected,		ditto	100 0	—
Shotts, at Leith		ditto	102 6	82 6
Kinneil, at Boness		ditto	95 0	80 0
Bar iron			£10 0	—
Nail rods			10 0	—

SHIPMENTS.

Week ending Oct. 24, 1874	Tons 10,324
Week ending Oct. 25, 1873	11,435
Decrease	1,111
Total decrease since Dec. 25, 1873	154,842
Imports of Middlesborough pig-iron into Grangemouth:—	
For the week ending Oct. 24, 1874	Tons 3,640
For the week ending Oct. 25, 1873	3,222
Increase	418
Total increase for 1874	45,932

Very great quietness characterised the Warrant Market last week, but yesterday a slight speculative movement manifested itself. The market is probably oversold, and if purchasers were simultaneously to demand delivery of their iron an advance would be inevitable—though only temporary, as makers iron is plentiful, and can be bought (in some instances) under the price of warrants. The stock in Connal's stores keep about 17,000 tons, the quantity going in and coming out being nearly equal. The furnaces in blast have been augmented to 119.

Makers of finished iron are finding difficulty in keeping their works going, best makers being scarcely half employed, and prices are all easier. The forges and foundries are also quiet, with a solitary exception or two amongst the smaller works. The shipments are becoming more contracted, and the parcels shipped are small and varied. Brass founders and copper workers are quiet. Tool makers have a few orders on their books, but locomotive builders are giving employment to a lessened number of hands.

The Coal Trade has an appearance of briskness, caused by the railway companies being deficient in wagons to bring forward the output freely to market. Prices have not improved, as the competition is great, and merchants await the inconvenience of a delayed delivery. The returns of shipments from the Scotch ports for the week just ended amount to 35,778 tons, against 34,150 tons in the corresponding week of 1873. In Fifeshire the domestic and shipping trades are alike dull, and the pits are confined to about half time. Stocks are largely increasing, and a reduction in prices is expected to result from the continuance of this inactivity.

Mr. Macdonald, M.P., at a meeting of miners, held on Friday at Mid-Calder, expressed his conviction that miners "were fairly entitled to an advance of 1s. a day, and if they took his advice they would press for it." The miners, of course, believed their oracle, and they are "pressing" for an advance, when the prices are falling, and the output is being to a large extent stocked. It is a pity Mr. Macdonald cannot better read the signs of times, and give his audience more shrewd advice.

The Garibaldi Pit, at Stonehouse, has been purchased by Mr. Barrowman, but the price has not transpired. Several mineral properties are being offered for sale, the aspect of the times and the fall in minerals being the attributed cause. Last week the estate of Auchlochan (parish of Lesmahagow) was purchased for Mr. W. C. S. Cuninghame, at the upset price of 70,000*l.*

EXAMINATION OF MANAGERS OF MINES.—The fourth examination of candidates for certificates of competency as managers of mines, under the Coal Mines Regulation Act, 1872, was held on Wednesday in Edinburgh, when a large number of candidates were examined. At the three examinations held in the eastern mining district of Scotland since the passing of the Act, 108 candidates have been examined, and 79 of these have succeeded in obtaining certificates. The examinations are held every six months in each of the two mining districts into which Scotland is divided, and the successful candidates receive certificates of competency from the Secretary of State. The value of these certificates is being more and more recognised by those engaged in mining operations.

NEW COAL SEAM AT KILSYTH.—A seam of coal, fully 3 ft. in thickness, and of fine quality, suitable for public works, has just been obtained in a new shank on the extreme east side of Drumshantie Moss, and adjoining the North British Railway, on the south bank, where a new connecting siding has been constructed for the conveyance of the minerals. Messrs. Stevenson and M'Creath, mining engineers, Glasgow, have had a staff of men engaged during the past week in making a survey of the town's fens, for the purpose of blocking off and showing on a plan, specially prepared, the distinct areas belonging to each of the different proprietors, together with the dimensions of the minerals underneath.

INTRODUCTION OF PNEUMATIC GAS.—The works of Messrs. Hally and Co., manufacturers, situated at Ruthven Vale, Auchterarder, were lighted on Monday with this new gas. There was a very large company present, numbering between 600 and 700. The opening of this new undertaking—the largest yet erected by the company—was a great success, and gave the utmost satisfaction to all present. Every light is equal to 20½ candles, and is free from odour while burning. The gas is made from gasoline, a spirit from petroleum or other substances, and from 3 to 4 gallons will produce 1000 cubic feet of gas. The cost ranges from 1s. 3d. to 1s. 6d. per gallon, so that gas can be produced at from 4s. to 5s. The cost of erecting the works will be about 200*l.*

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

Since my last report a fair amount of business has been done, and prices are again tending upwards. Shotts show a rise of fully 2½ per share, principally owing to the scarcity of the shares at the settlement. In Copper shares Huntington have improved to 3, 3⅛, but this must still be viewed as a very cheap price for a 9*l.* paid share. Tharsis also show an improvement, at 25⅛, this price being less the dividend payable on the 11th proximo. In American, Colorado Terrible and Emma have improved, while Flagstaff has declined. A petition has been presented in order to have Tecoma wound-up. In Miscellaneous, the only movement of importance is a recovery of 1*l.* per share in London and Glasgow Engineering and Iron Shipbuilding, at 21. A detailed list of the several days' business follows:—

On Friday last the market was firm, and a good business done. Bolckow, Vaughan, A, done at 55¼, closing 55 to 55½. Cairntable changed hands at 5½. Canadian Copper Pyrites done at 48s. and 47s. 6d., closing 47s. to 48s. Conglog steady at 10½ to 11; the monthly report of progress at this company's quarry has just been issued. Attention is still directed to the opening of the chamber in No. 1 gallery east and No. 1 gallery west. The quarry incline and drum walls are ready. The tramway and Cwmorthin incline will soon be finished ready to lay down the rails. Mr. Jones has surveyed the quarry for the purpose of making several of the different floors. Ebbw Vale lower, at 22¼ to 22½. Emma done at 22s. 6d., closing 23s. to 24s. Huntington done at 57s., closing 56s. 6d. to 57s. 6d. Islay Lead better at 17s. 6d. to 18s. Javali firm at 4s. 9d. to 5s. Lochore and Capledrae slightly lower at 7 to 7¾. Marbella done at 5¾, closing 5¾ to 5½. Merry and Cuninghame done at 70s., closing 70s. to 70s. 6d. Monkland, ordinary, rather flat, done at 91s., 90s., and 89s., closing 89s. to 90s.; guaranteed preference, also lower at 8 to 8½. Niddrie done at 50s., closing 49s. to 50s. North Cornwall Kaolin lower at 22s. 6d. to 25s. Omoa and Cleland done at 63s., closing 62s. to 64s. Shotts changed hands at 76, being 1 up, closing 76 to 80. Tharsis shares were in especial request, opened at 25¾, and gradually advanced to 26½, closing 26⅜ to 26⅝; new shares also good, done at 18⅜, closing 18½ to 18¾. Young's Paraffin unchanged at 5 to 5¼. London and Glasgow Engineering done at 21, being 1 higher, closing 20½ to 21. Scottish Wagon shares changed hands at 12¼.

On Saturday little business was done, prices, however, were steady Penhar lower at 14⅞, sellers. Canadian Copper Pyrites done at 49s. 6d., 50s., and 51s., closing 51s. to 52s. Conglog, 10⅝ to 10⅞. Dunsley Wheal Phœnix sellers at 15s., buyers nominally at 5s. This company has struck a lode in the 47 *fm.* level 7 to 8 ft. wide, compact, with stones of copper and beads of quartz. Emma shares are better at 23s., closing 23s. to 24s. Flagstaff lower at 1⅝ to 1⅞. Glasgow Caradon sellers at 30s. This company sold on the 22nd inst. 245 tons of copper ore, realising 1250*l.* 18s. As before pointed out, this compares with a very large sale for the corresponding month last year—308 tons, which realised about 1516*l.* The average price then realised was 99s. 5d. per ton, comparing with 102s. 1d. now, which is satisfactory. This sale also shows an improvement in the average price realised per ton over last month's sale. Islay Lead flat at 15s. to 17s. 6d. Javali easier at 4s. 9d. to 5s. Marbella done at 5½, closing better at 5 7-16 to 5½. Merry and Cuninghame done at 70s., closing 70s. to 71s. Niddrie lower at 48s to 50s. North Cornwall Kaolin unchanged at 22s. 6d. to 25s. Omoa and Cleland offered at 64s. 6d. Tharsis slightly better, done at 26⅝, 26¾, 26 11-16ths, 26⅝, and 26 9-16ths, closing 26 9-16ths to 26⅝. New shares done at 18½, closing easier at 18 to 18¼. Young's Paraffin, 5 to 5¼; London and Glasgow Engineering, 21s.

On Monday little business was done, and prices were mostly lower. Benhar done at 14¼; Bolckow, Vaughan, A, done at 55; Canadian Copper Pyrites done at 50s., then gradually went up to 53s., closing 52s. to 53s.; Conglog quiet, about 10¾; Emma done at 23s., closing 22s. 6d. to 23s. 6d.; Glasgow Caradon done at 30s., closing 29s. 6d. to 30s.; Port Washington lower, at 70s. to 73s.; Huntington exceptionally firm, at 58s. 6d. to 60s.; Islay Lead again flat, at 15s. sellers, but no buyers; Javali unchanged, at 4s. 9d. to 5s.; Marbella easier, at 5¾ to 5½; Merry and Cuninghame steady, at 70s. to 70s. 6d.; Monkland guaranteed preference were rather firmer, at 8¼ to 8½; Niddrie done at 48s. and 47s. 6d., closing 48s. to 49s.; North Cornwall Kaolin firmer, at 23s. 9d. to 26s. 3d.; a very good report has been made on this company's produce by Mr. John Farral, of the Staffordshire Potteries. He says:—"Your Cornish stones are very vitreous, which is a very good qualification; and as you get lower down the quarries it will, I think, be purer and a good stone, of which a very large sale may be made. The china-clay samples sent me I have also tested, and are very strong and will improve in colour as you go deeper, and fetch good prices." This report is very satisfactory, as it substantiates what was stated in the last report to the shareholders—namely, that the quality of the kaolin or china-clay got from the property is equal to the bulk that is sent from the St. Austell district. The rates or dues in the St. Austell district are on clay 2s. 6d. to 5s. per ton, and on stone 5s., with large minimum rents, whilst the royalty payable on the North Cornwall Kaolin Company is only 1s. per ton on clay, and 1s. 6d. on stone, or a minimum rent of 100*l.* Amoa and Cleland lower, done at 63s., closing 62s. to 63s.; Shotts in demand, at 77*l.* to 80*l.*, or a further rise of 1*l.*; Tharsis opened at 26⅝, but gradually declined, and close 26⅛ to 26¼, being the lowest point of the day; new shares also lower, at 17¾ to 18; Young's Paraffin easier, at 5 to 5⅛.

On Tuesday (being contango day) the market, though quiet, was firmer, and prices were, as a rule, higher. Canadian Copper Pyrites shares are lower at 50s., closing 49s. 6d. to 50s. 6d. Conglog, 10⅝ to 10⅞. Cwm Bychan shares offered at 18s., buyers nominally at 15s. Cwm Lery shares quoted at 12s. 6d. to 15s.; it is stated that these shares are likely soon to become very valuable. Ebbw Vale shares done at 22½, closing 22¼ to 22½. Emma shares better, done at 25s., 24s., and 25s., closing 24s. to 26s. Port Washington shares done at 73s., closing 72s. 6d. to 73s. 6d. Gunnislake (Clitters), 25s. to 30s.; this mine is now said to be paying cost. Isley Lead shares still offered at 15s. Javali shares very firm at 4s. 2d. to 5s. Marbella shares better, done at 5½, with buyers over, sellers asking 5 9-16ths. Merry and Cuninghame shares also better at 70s. 6d. to 71s. 6d. Nanty-Glo and Blaina preferred shares lower at 40 to 45, without business. Niddrie shares done at 47s. 6d. and 50s., closing 48s. to 50s. North Cornwall Kaolin shares steady at 25s. Shotts shares good at 77½ to 80., being rather scarce for immediate delivery. Tharsis shares done at 26⅜ and 26 5-16ths, closing 26¼ to 26¾. Young's Paraffin shares at 5 to 5¼. West Maria and Fortescue shares, 6s. 3d. to 8s. 9d. Yorke Peninsula ordinary shares 8s. 9d. to 11s. 3d.; guaranteed preferences, ¼; the directors of this company have received, from the Committee of Inspection at Adelaide, advices, with reports, up to September 10, from the Kurilla Mine; and as these advices will doubtless be found *in extenso* in another part of the Journal, I will confine myself to congratulating the shareholders on their exceedingly satisfactory nature, and of assuring those who have any idea of investing in progressive mining property that it is simply impossible to find a better investment in the Share List at present than Yorke Peninsula 15 per cent. guaranteed preference shares. The following were the rates of continuation current to-day:—Contangos: 3d., 2d. on C.C. Pyrites: 1d. on Emma; 2d. on Glasgow Caradon; 1d. on Port Washington: 3d., 2d. on Huntington; 1d., 3d., 1d. on Marbella; 2d. on Monkland ordinary; 1s. 6d., 1s. 3d., 1s. on Tharsis; 1s. on Tharsis new; 3d. on Young's Paraffin.—Backwardations: 3d., 2d., 2½d., 3d. on Merry and Cuninghame; 6s. 3d. on Shotts. The only notable changes in these rates are that the "back" on Shotts is slightly higher, and the "back" which was current on Marbella at last settlement has given place to a contango. The making-up prices show that the only shares which have risen since last contango day are Emma (5s.), Glasgow Caradon (6d.), Marbella (1s. 3d.), all others being lower, the fall varying from 1s. on Merry and Cuninghame to 26s. 3d. on Tharsis. Port Washington are 10s. 6d. higher, the making-up prices being 62s. 6d. and 73s., but as a call of 1*l.* per share is not included in the former price they are in reality 9s. 6d. lower.

On Wednesday a small business was done, but prices were again steady. The account for settlement on Nov. 13 opened to-day, and Tuesday, Nov. 10, will be contango day. Canadian Copper Pyrites done at 50s. and 50s. 6d., closing 50s. to 51s. Conglog firm, at 10¾. Emma done at 25s., closing 25s. to 26s. Glasgow Caradon offered at 30s. Port Washington done at 73s. Huntington good, done at 59s. 6d., closing 59s. to 60s. Islay Lead firmer, at 15s. Javali done at 4s. 9d. Marbella, 5 9-16ths to 5⅝; Merry and Cuninghame done at 71s. 6d. and 72s. 6d., closing 71s. to 72s. 6d. Monkland guaranteed unchanged, at 8¼ to 8½. North Cornwall Kaolin quiet, at 25s. to 27s. 6d. Tharsis done at 25½, closing 25 to 25¼. These prices are ex div. of 25s. per share, so that the shares are slightly higher since yesterday; new shares, 17½, also ex div., without business. Subjoined will be found the latest prices:—

Amount of share.	Amount paid up.	Name.	Latest price.
COAL, IRON, STEEL.			
£10	4	Arniston Coal (Limited)	4
10	10	Benhar Coal (Limited)	14¼
100	55	Bolckow, Vaughan, and Co. (Limited) A.	55
10	5	Cairntable Gas Coal (Limited)	5½
10	10	Chillington Iron (Limited)	6
32	29	Ebbw Vale Steel, Iron, and Coal (Limited)	22¾
10	3	Fife Coal (Limited)	5¼
10	7	Glasgow Port Washington Iron and Coal (Limited).	73s.
10	10	Ditto All paid	6
10	10	Lochore and Capledrae (Limited)	7⅜
10	10	Marbella Iron Ore (Limited)	5 9-16
10	3½	Merry and Cuninghame (Limited)	72s.
10	10	Ditto All paid	10
10	10	Monkland Iron and Coal (Limited)	89s.
10	10	Ditto 7 per cent. Guaranteed Preference.	8¼
100	100	Nant-y-Glo and Blaina Ironworks pref. (Limited)	42½
10	2	Niddrie Coal (Limited)	2½
10	4	Omoa and Cleland Iron and Coal (Limited)	63s.
1	1	Scottish Australian Mining (Limited)	1⅛
1	5s.	Ditto New	3⅛
50	50	Shotts Iron	77½
10	4	Ditto New, issued at 2½ premium	6
COPPER, LEAD, SULPHUR, TIN.			
10	7	Canadian Copper Pyrites (Limited)	50s. 6d.
10	10	Ditto All paid	6½
10	7	Cape Copper (Limited)	28
1	1	Cwm Bychan Silver-Lead (Limited)	18s.
1	1	Cwm Lery Lead (Limited)	15s.
5	5	Drake Walls Tin and Copper	5
2	2	Dunsley Wheal Phœnix Tin (Limited)	¾
—	25	East Black Craig Lead (Limited)	25
1	1	Glasgow Caradon Copper Mining (Limited)	30s.
1	15s.	Ditto New	22s. 3d.
—	5½	Gunnislake (Clitters)	1⅛
10	9	Huntington Copper and Sulphur (Limited)	62s.
1	1	Islay Lead (Limited)	¾
25s.	25s.	Kapunda Copper (Limited)	¼
4	4	Panulcillo Copper Mining (Limited)	⅜
10	9	Rio Tinto (Limited)	8
10	10	Russian Copper Mining (Limited)	2½
10	10	Tharsis Copper and Sulphur (Limited)	25⅛
10	7	Ditto New	17½
—	80s.	West Maria and Fortescue	8s. 9d.
1	1	Yorke Peninsula Mining (Limited)	¼
1	8s.	Ditto 15 per cent. Guaranteed Preference	¾
GOLD, SILVER.			
5	5	Colorado Terrible Mining (Limited)	3½
20	20	Emma Silver Mining (Limited)	23s.
10	10	Flagstaff Silver Mining (Limited)	1⅞
2	2	Javali Gold Mine (Limited)	¼
5	5	Last Chance Silver Mining (Limited)	20s. 3d.
OIL.			
10	7	Dalmeny Oil (Limited)	5⅞
5	5	Midlothian Mineral Oil (Limited)	3
10	8	Uphall Mineral Oil (Limited)	6
10	10	West Calder Oil (Limited)	7½
10	8½	Young's Paraffin Light and Mineral Oil (Limited)	5
MISCELLANEOUS.			
10	10	Conglog Slate and Slab (Limited)	10¾
10	10	Highland Peat Fuel (Limited)	10
50	25	London & Glasgow Engineering & Iron Shipbuilding	21
1	1	North Cornwall Kaolin (Limited)	1¼
20	7½	Peruvian Nitrate (Limited)	5
10	10	Scottish Wagon Company (Limited)	12¼
10	1	Ditto New	22s.

Last day for this account Nov. 10; settling day, Nov. 13.

NOTE.—The above list of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or these in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in this list, they will be good enough to communicate the name of the company with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, Oct. 29.

REPORT FROM CORNWALL.

Oct. 29.—Mining affairs generally are very dull, and so we presume with a view to enliven them, certain parties have been setting afloat divers rumours with regard to the position of individuals and mines. This is most reprehensible. In the old story the "navvy," when he was thrashed by his wife, said it pleased her and did not hurt him; but this is a very different matter. These rumours are sure to injure those men or concerns with regard to whom they are circulated; and the more vague they are the more dangerous, though everybody who knows anything at all about mining knows that these statements often arise from pique or prejudice, or from a desire to manipulate the market, whilst in not a few cases those who do circulate them act as the mere jackals of bigger men behind. We do not intend to make any reference to these statements beyond this. When a man cannot ascertain the truth of such reports or otherwise, the best thing is to refrain from giving them further currency.

It does not appear as if the old staff of West Chiverton had quite fair play at the London meeting; but it would certainly appear more dignified if Mr. Clogg had bowed to the inevitable, and retired without insisting on his legal right. It was natural, however, that he should feel some annoyance at the manner in which the new project was sprung. Nor has he been at all fairly served, for it is well known that he urged the desirability of charging the accounts to Aug. 15 at the meeting in London, Sept. 25, so as to have shown the real financial position to that date, and how it was opposed. It was, therefore, unfair to insinuate that his financial statement was wrong and deceptive on that account. And so, too, it would have been far better if the whole of the defence of the staff had come out at the meeting. Yet one scans the report of what took place for it in vain, though certainly the certificate of two such men as Capts. T. Richards and J. Thomas that the mine has been properly worked ought to have gone for something even with outside shareholders, many of whom seem to have the idea that if a shaft is sunk anywhere in Cornwall it is all the manager's fault if a profitable lode is not discovered; so also a good deal may be said concerning the engines were it our intention to defend the late management. All we wish to do, however, is to point out that it is impossible to admit the gross total of the charges made, though that there have been errors and omissions no one we suppose would deny.

The general feeling in the county appears rather one of sympathy with the West Chiverton staff. In the first place, the position was carried by a *coup de main*, and had it not been by accident those against whom the attack was made would have known little or nothing of its preparation. In a matter which professedly dealt with the interests of all the shareholders, in common fairness all the shareholders should have been put in possession of whatever information there might be. But this was not done; and this gave the whole affair at the outset a decidedly one-sided appearance. As the case stands, but a very small minority of the shareholders can have any real means of judging between the rival statements of the new and old party; and, under such circumstances it is, perhaps, not to be wondered at that those who have been disappointed with the present financial condition of the mine should be inclined to side with those who make the largest promises. That the old management may have had faults, as we have already said, we are not at all disposed to deny; but we repeat that it is impossible for men of common-sense, practically acquainted with the circumstances of mining in the county, to believe in the accuracy of such sweeping charges as those brought. Take the one item of machinery. We

have the denial of the late engineer, Mr. Loam, either that the statements made on the other side as to the condition of the machinery are true, or, if true, that they are attributable to circumstances within the managerial control. Upon whom are the outside and unprofessional shareholders to pin their faith? The truth is that the West Chiverton business is not to be satisfactorily disposed of in any such rough and ready way as that of installing a new staff.

We are glad to learn that one of Mr. Darlington's Rock-Borers is about to be set at work at Wheal Agar. It is in such a direction as this that we must look for a reduction of the heavy expenditure on working, which tells so seriously against our interests. There can be nothing simpler than the Darlington, there is no borer more effective, and we should really be ashamed of the mining skill of Cornwall if it cannot overcome the difficulty of applying the power. The use of the boring-machine not only means reduction in cost, but increased speed in development. Then, again, why do not Blake's Stone Crushers come more into use? The few there are in the county do their work well, and there is an immense quantity of low produce tinstuff in the county, of which it has been well said that it could be much more cheaply broken up by the crusher than by hand. Again and again have we pressed this.

Apropos of the recent prosecutions of mine managers, which the Government Inspector, Dr. Le Neve Foster, has been compelled to take, for delay in sending in the returns required by law, it may be as well to state here that owners and managers of mines (unless fewer than 12 persons are employed underground) are bound to apply to Dr. Foster for the proper form, and to make the return thereon in July. It is not the duty of the Inspector to send the forms out, but to supply them on application, the onus of neglect resting not on him but on the owners and managers.

We have been favoured with a proof copy of a paper "On the Spathic Iron Ores of Cornwall," by Mr. W. R. Roebuck. It is a full and exact statement concerning the Great Perran Iron Mines, a section of which is given, while the evidence is adduced thereon of such authorities as Mr. Bessemer and Prof. Warington Smyth, F.R.S. Mr. Bessemer has stated before a Committee of the House of Commons that from personal inspection of the Perran iron lode he was satisfied that it contained millions of tons of spathose iron, specially adapted for making Bessemer steel; while Mr. Warington Smyth has always held the opinion that the Perran lode would prove very rich in spathose iron. Mr. Roebuck states that in the course of a few months the output of the Cornish Consolidated Iron Mines Corporation will be at least 1000 tons a-day. The appendix contains a series of valuable analyses of the ores, both hematite and spathose, and a longitudinal section of the workings of the Mines Corporation from the coast in Perran Bay to Duchy Perran Mines.

Capt. Teague is now a large landowner. He has followed the examples of the mining magnates of previous days by investing considerable sums in land. It is stated that he has bought Crackington Manor, near Camelford, near which he has other fine properties, consisting of 1590 acres, for about 20,000*l*. He has shown his wisdom in thus investing the riches which he has taken out of the bowels of the earth in broad acres on the surface. Since he has been at Tincroft he has purchased about 50,000*l*. worth of freehold property.

Much and natural excitement has been caused at Penrhyn by the action of the Falmouth Harbour authorities in allowing about 40 tons of gunpowder to be moored in two barges about half way up the Penrhyn river. When the Candahar was in collision with the Kingsbridge off the Lizard she had about 40 tons of gunpowder on board. It being necessary to overhaul the vessel all her cargo was removed, and the powder put into two barges and moored off Boyer's Cellars. Two members of the Penrhyn Corporation will, at the next meeting of the Borough Council, move a resolution to the effect that shipments of gunpowder shall not be made from the town quays. It is said that as many as 20 tons are shipped there at a time from the Kennal Vale Powder Mills, and that frequently the barges wait for a tide with all that quantity of powder on board.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 29.—Although for the present the activity at the mills and forges of the district is fairly sustained, the tone of the iron market is scarcely so vigorous as we were recently able to report. New orders are coming to hand less rapidly than old ones are being executed, and selling prices are scarcely so firm for medium and common makes. The pig-iron manufacturers are doing a steady, quiet trade, both in cinder and mine iron. Common cinder is 3*l*. 5s. to 3*l*. 7s. 6d., and all-mine 5*l*. to 5*l*. 10s. per ton. Cold blast pig for foundery purposes is in well-sustained demand at about late rates. There is less talk than was recently the case about the re-lighting of additional furnaces. The number at present in operation is 74, being 20 less than at the corresponding period of last year. Finished iron is without any quotable change in price, but selling rates are less strong than reported a week ago. Common bars are 9*l*. 15s. to 10*l*., and marked ditto 10*l*. 10s., only a few makers realising the official standard of 11*l*. Ordinary sheets (singles) are quoted 13*l*., but sales have taken place at somewhat under this figure. The plate makers complain of the scarcity of orders, and the demand is declining for hoops and angles. There is a fairly sustained enquiry for gas strip, nail rods, and galvanised roofing sheets.

The Darlaston Steel and Iron Company have just discovered that the whole of the Cannock Chase coal measures underlie the seam now being worked in their great Essington Colliery. The importance of this discovery is not confined to the company more particularly interested. It indicates an almost indefinite extension of the Cannock Chase coal field.

The South Staffordshire Coal Trade is improving steadily, and prices begin to show less irregularity. Furnace coal realises 10s. to 12s. per ton. As a rule, however, the collieries are not yet in full production. Ironstone is in steady demand, and white and gubbin of good local sample realise 20s. to 21s. per ton.

Mr. Robert Heath, of the Ravensdale Ironworks, North Staffordshire, who has devoted much attention to the subject of mechanical puddling, has completely established the success of the Danks machine. He has six of these furnaces now in profitable operation, and the number will shortly be increased to ten. A new hammer is being put down to manipulate the balls after they have left the "squeezer." The adaptation of the forge rollers to the reversing principle is also contemplated, by which means much cost and labour will be saved in the working of the massive blooms. By these enterprises Mr. Heath is only anticipating by a few years what must become general in Staffordshire if the county is to maintain its position amongst the iron-producing centres of the kingdom.

Sandwell Park Colliery (10*l*.) shares, which a few weeks since stood at 50, have declined to 36, sellers. Cannock and Huntington Colliery are ¼ dis.; Pelsall Coal and Iron, 3 to 2 dis.; Patent Shaft and Axle, 5½ prem.; Chillington Iron, 6; John Bagnall and Son (Limited), 7; and Ivy House and Northwood Colliery, ½ dis.

The recent reduction of 1*l*. per ton in the price of heavy iron castings has had the effect of stimulating the demand for such descriptions of produce as chilled rolls, pins, and other mill and forge machinery. The iron districts of the North of England and Belgium are among the leading sources of enquiry. The mechanical engineers in Birmingham and the South Staffordshire district continue to experience a considerable demand for pumping apparatus specially adapted to mining purposes.

The Iron Trade of North Staffordshire is without any new feature of importance this week, either as to the state of the demand or the course of quotations, but the general tendency of the market is in the direction of ease. Coal is in plentiful supply at about late rates.

CHARGES UNDER THE COAL MINES ACT.—At Hanley, on Monday, Messrs. Cox and Twyford, owners of the Newpool Colliery, Biddulph, were summoned by Mr. Wynne, Government Inspector of Mines, on a charge of working a pit for more than fourteen days without appointing a manager, as required by the Coal Mines Act. Mr. Wynne was supported by Mr. Booth, solicitor, and Mr. A. Tennant appeared for the defence. The facts were not disputed, but for the defence it was urged that the pit came under the exemption clause of the 26th section, the number of men "ordinarily" employed being under 30.—Mr. Wynne said there had been over 30 men employed in the pit.—Mr. Tennant admitted that on three days over 30 men were working in the pit, but this was not the number "ordinarily" employed.—Mr. Booth claimed a conviction under another part of the 26th section, on the ground that the quantity of coal raised had exceeded 25 tons a day; but Mr. Tennant submitted that the quantity of coal raised was not material if less than 30 men were employed.—The magistrates (Messrs. Greenwood, Ridgway, and Ashworth) held that the word "ordinarily" brought the defendant within the exemption part of the clause. It could not be said that employing over 30 men for three days was "ordinarily" employing over 30 men.—Mr. Wynne asked for a case, but Mr. Greenwood said the words of the clause were so clear that he had no doubt in the matter, and he should decline to grant a case.—Mr. Wynne said he had orders from Mr. Lushington to ask for a case.—Mr. Greenwood said if Mr. Wynne insisted upon a case, he knew the course to be taken.

Richard Conway, manager of the Stonebrough Colliery, Harrishead, was charged with neglecting to cause an adequate amount of ventilation to be provided in the pit, under the first general rule. Mr. S. B. Gilroy, Assistant Government Inspector, said he visited the colliery on Oct. 14, and went through the workings on the west side, where the air was generally slack. His light was put out by the damp six times in the presence of the defendant. Three persons were working in the place, and one had to continually pass and repass through the damp. The effect of damp upon a living person was suffocation, unless there was quick removal into fresh air. He considered it a very improper place for men to be employed, but the defendant very reluctantly withdrew the men at work there. The defendant said the pit was examined in the morning, and declared to be safe. He had been connected with the pit 30 years, and had never had a single accident through bad air. —The Bench held the charge proved, and inflicted a fine of 5*l*. and costs.—*Birmingham Daily Post.*

REPORT FROM DERBYSHIRE AND YORKSHIRE.

Oct. 29.—Lead mining in Derbyshire has undergone no change since last notice, and the men continue steadily at work in all the districts. Few of the companies do much more than pay expenses, whilst some private firms are doing tolerably well. The collieries are now going on very well, with an increasing demand for house coal. A heavy tonnage continues to be sent from Langley Mill, Clay Cross, Sheepbridge, and Staveley to the metropolis, where prices have advanced considerably of late, although it cannot have been from any actual scarcity of coal. Merchants, however, are having an excellent time of it, and they are much helped by the strikes in the Wigan and West Yorkshire districts, and as usual consumers follow a rising market, and have to pay accordingly. A good deal of coal is also being sent into the Eastern Counties. The business doing with Birmingham and the Midland and Western districts is also good for the season. Iron makers have been doing very fairly, when it is considered that the demand for Sheffield has of late not been so large as it was during the corresponding period of last year. Still the output of the furnaces is well kept up. In manufactured iron the trade is what may be termed good, if not particularly active. At Staveley they are busy in pipes and other castings, both heavy and light, for which the company are noted. The works along the Erewash Valley line are in a healthy state, and the same may be said with respect to those in the neighbourhood of Chesterfield, Dronfield, and Eckington.

A little more activity is observable in one or two branches of the Sheffield trades, but several of them are far from busy. At the Atlas Works of Sir John Brown and Co. they are making a good many heavy and light plates. Messrs. Cammell and Co., of the Cyclops Works, have their Bessemer rail mills going as usual, and have not followed in the course taken by Sir John Brown. Still, there is no doubt that neither of these firms can compete in prices with the Barrow Company, who have the hematite ore pretty close at hand, and make all their own pig, the furnaces being connected with the converters and the mills. Amongst the works that have been kept well going during the year may be mentioned those of Messrs. Crowley and Son, the largest makers of malleable castings we have, and who have recently brought out some important novelties that have commanded more than ordinary attention, amongst them being a patent lawn mower and other light agricultural machines. They are also turning out some ornamental castings of a very fine character.

Some changes have taken place in the Coal Trade of South Yorkshire, which is now more active than it has been for some time past. The strikes in West Yorkshire and Lancashire have led to an increased demand at the collieries lying between Barnsley and Doncaster and Sheffield. During the past week several merchants have visited the district, and have offered in some instances advances of from 1s. to 2s. per ton for supplies of house and other coal. Large accumulations of slack, which two or three weeks ago were offered at a very low figure, have been cleared off at a considerable advance, a large tonnage having been forwarded to Lancashire. The trade with London over the Great Northern has been well maintained, and prices are on the rise. The settlement of the strikes, however, would make a very great difference, for there is no reason why coal should not be considerably lower than it now is, seeing that were all the districts at work the production would be greatly in excess of the consumption.

At the Yorkshire College of Science, Prof. Green, who had been appointed to the chair of Geology, on Tuesday, delivered the first evening lecture on "The Method of Geological Enquiry." The lecturer said they could compare the rocks of the earth's crust to a record of history. Just as the history of a nation was written on vellum, in the same way the early history of the earth, before we came to written records, was stamped on the earth's crust. The only thing we had to do was to try and read the language in which it was written. Now, there was a simple way of reading it, and that was by giving a free range to our fancy, and when we saw some fact produced, to imagine what would produce it. For many centuries men went on inventing all sorts of theories to account for the changes which had passed over the earth, but a Scotchman, named Hutton, was the first to suggest a theory by which they might arrive at the truth. Hutton said that when they had got a rock which enclosed the remains of some mammals—a rock which had been formed since the animals lived—then they must look about and see if there was anything like that rock being formed now, and when they had found it they must study how that substance had been produced; and it stood to reason that Nature worked in the same way before as she did now. Hutton's principle was right to a certain point, and it was by pursuing the principle laid down by him that they had been able to unravel all the complicated records which were written on the rocks of the earth's crust.

REPORT FROM MONMOUTH AND SOUTH WALES.

Oct. 29.—None but discouraging advices are still received in regard to the condition of the Iron Trade, and prospects remain as gloomy as ever. This branch of industry has undoubtedly lost its status for a time, at least, in this district, for under present circumstances it cannot be regarded as the leading staple of the district, which position it occupied until a year or so ago. It may, however, be said that fluctuations have been common to the trade from time to time, and after times of activity and prosperity have followed periods of depression, and occasionally considerable depression, when prices and wages have sunk so low as to be scarcely worth receiving. There is a probability, therefore, that the trade may yet recover its lost position to some extent, and there will certainly be a limit to the dulness which now prevails. As to the rate of wages, it must be admitted that the ironworkers are better off than they have been during many times of depression, but what is most complained of is that work is so short. Only two or three days can be worked in the week; and, though the men are paid liberally for the work they do, they cannot get enough of it to earn anything like reasonable wages. This, of course, is attributable to the few contracts which are coming to hand, customers not caring to infuse any spirit into their transactions, and finished iron is little better than a drug in the market. The only establishment in the district where a reasonable degree of activity is to be noticed is at Dowlais, for there iron-making is still carried on on a tolerably large scale. But at Cyfarthfa, and the other works in the Merthyr and Aberdare districts, things look exceedingly dull.

The forthcoming reduction is likely to cause further disputes between masters and men, and something is heard about a combined action. What course the men contemplate is not at all clear, but it is understood that they are canvassing the opinions of the majority as to what should be done. Of course a reduction is sure to be carried out, although it has not yet been announced; nor is it yet clearly known what its extent will be.

The demand for Tin-Plates continues fairly steady, but dull.

What keeps up something like a show in the district is the Coal Trade. Fortunately, there is a very good demand for all qualities, and proprietors are able to secure enough contracts to keep their pits going in full work, and in all directions an extensive business is being done. Among the foremost in the coal market are the iron-masters, and, although ironmaking is almost abandoned at Cyfarthfa, coal-getting is pushed forward with greater vigour. This may be said in regard to all the collieries connected with the ironworks, for larger quantities of steam and house coals are now sent to the home and foreign markets from those collieries than ever was the case before.

Prosperity or no prosperity the colliers are not without a grievance. Complaint now is directed against the new code of rules which the Masters' Association has just agreed upon. At several meetings which have been held the men have condemned some of the rules as tyrannical and impracticable. One thing they complain about is that they are compelled to leave the pit at a certain hour only, and altogether, unless in a case of "absolute necessity."

On Wednesday a mass meeting of the house coal colliers was held in the Rhondda Valley, for the purpose of considering a question relating to the Brithwennydd Colliery. It has been the practice to pay the men 3s. per ton, less 20 per cent. for mixed coal, called brush coal; but now Mr. D. Thomas, the proprietor, had ordered that none but large or "clean" coal is to be sent to bank, and this the men say will make a difference of 3½d. per ton to them, and Mr. Thomas proposes to pay 2½d. per ton extra, without any deduction. The object of the men was to see how the matter would affect the colliers generally in the district.

TRADE OF THE TYNE AND WEAR.

Oct. 29.—The dispute with the miners in Northumberland has been settled without having recourse to arbitration. It was decided last week to refer the case to arbitration, but afterwards attempts were made by Mr. Burt and other delegates to bring the matter to a settlement by mutual arrangement, and a conference took place on Saturday, when it was finally settled that a reduction be made of 10 per cent. on the present rates; this will allow the coal hewers in Northumberland to earn at least 8s. 6d. per day for six hours work. The men and colliery owners in Northumberland are in a much more enviable position than the same classes in Durham. In the former county the bulk of the coal produced is a hard steam coal of good quality, which is generally in good demand, and comparatively little small coal is produced from those seams. In Durham the situation is very different—much small, in many cases as much small as round coal, is produced from the soft seams, and this small coal can at present hardly be sold at all. Unless a large reduction is made in the rates paid to miners in Durham many of the small owners will have great difficulty in keeping their heads above water during the next six months. At two of the works where the men are members of the Northumberland Miners' Union they have refused to accept the terms arranged for a reduction of 10 per cent., and the works are stopped in consequence. Those works are the Ashington Colliery, where 400 men and boys are employed, and the Elswick Colliery, where 300 hands are employed. The arbitrators in the Durham miners case met in London on Monday, and again on Tuesday, at the Westminster Palace Hotel, and a long discussion took place as to the precise terms in which the award should be made. They were, however, unable to agree, and the points in dispute were referred to Mr. Russell Gurney, M.P., who had previously been appointed umpire. It is expected that he will give his decision in a few days.

The Coal Trade continues to improve in some branches, the demand for house coal for the coast and London is tolerably active, and prices have advanced a little. Gas coal is in good demand, and held firmly at 13s. per ton. The steam coal trade is steady, and prices are well maintained. Manufacturing coal and small coal are sold at very low prices. In South Durham a good business is done in best class coal and coke, but all inferior coal is at a discount, and large quantities are held in some cases in stock.

A very shocking accident occurred at the Framwellgate Moor Colliery, on Saturday, whereby one man, Matthew Gustard, was killed, and two men were severely injured. Gustard and his mates had prepared a shot for the purpose of blasting stone, but from some cause when the fuse was lighted and the men returned for the blast the shot missed, or did not explode for some time, and the unfortunate men ventured in to examine the shot when the explosion occurred, with the fatal result already stated. Frequent accidents of this kind occur, and it is evident that if some more certain mode was discovered of exploding charges of powder a number of serious accidents would be avoided. The old system of exploding shots was by straws filled with powder, and this system is still preferred by some old miners, although patent fuse is more generally used, and while there is no doubt that it possesses many advantages, it is very far from being reliable. It has, indeed, been known for a blast to miss when the fuse has been ignited, and an explosion has occurred from the same fuse after an interval of 20 minutes. The fuse commonly in use is not homogenous throughout its length, splices are made, and those splices are very objectionable, as it often occurs that the process of combustion is stopped at those points. The fuse is also sometimes injured by using the rammer, and this prevents the fuse taking effect. A certain and quick mode of exploding shots in drifts, shafts, &c., would be a great boon to the miner, and it would be the means of saving many lives annually.

The Iron Trade continues very quiet, although there is a good demand for pig metal. At Middlesborough, on Tuesday, there was a large attendance, but only a moderate business done. No. 3 Cleveland iron was again quoted 65s. to 66s. per ton, All the blast-furnaces in operation are working well. There is nothing new in the finished iron trade; the demand for rails and bars of all kinds keeps moderate, but there is a good demand for ship and boiler plates. Engineers, founders, and iron shipbuilders are well employed. The Coal and Coke Trades are dull.

THE MANCHESTER GEOLOGICAL SOCIETY.

The annual meeting of this society was held on Tuesday, the 27th inst., at the rooms of the Literary and Philosophical Society, George-street,—Mr. THOMAS KNOWLES, M.P., President, in the chair.

The report of the Council, which was read by Mr. J. E. FORBES, F.G.S., one of the hon. secretaries spoke most favourably of the affairs of the society. Members, the Council said, would judge for themselves as to the scientific importance of the papers which had appeared in the printed Transactions, but they might be permitted to remark that in every case the subjects of the papers had been interesting and in some new discoveries in geology in this district had been announced. Attention was directed to a paper on coal-cutting machinery as being especially interesting and instructive. This formed the only contribution during the session on mining matters. Members would do essential service to the society by contributing papers similar in character either upon the economic management of mines, upon explosions in mines, or other important features of mining industry. Many valuable papers upon these subjects appeared in the earlier volumes of the society's transactions, and it was desirable that these should be continued, so as to form a permanent record of the improvements and changes which yearly are being effected in all mining appliances and management. The society at present had enrolled 120 members, of whom 91 were subscribing, 8 life, and 21 honorary members. Of the latter 12 had been elected during the past session. The Council deeply regretted to have to record the death of five distinguished men who had been members of the society since the year of its formation (1838), and whose loss to the society left a blank which would never be filled in like degree. These were Prof. Louis Agassiz, Prof. John Phillips, Sir William Fairbairn, Bart., Mr. Mark Philips, and Mr. Peter Higson, sen.—The treasurer's accounts showed a balance in favour of the society of 150*l*. Beyond this the society has 500*l*. invested in Birkenhead Railway Stock, and a valuable library.

The report was adopted on the motion of the CHAIRMAN, seconded by Mr. J. DICKINSON.——On the motion of Mr. J. E. FORBES, seconded by Mr. JOHN PLANT, Professor W. Boyd Dawkins, F.R.S., was unanimously elected president for the ensuing year.

The following gentlemen were elected vice-presidents (in addition to the ex-presidents, who become vice-presidents *ex officio*)—Mr. John Aitken, Mr. Joseph Dickinson, Mr. John Knowles, and Mr. Thomas Knowles, M.P. The treasurer (Mr. H. M. Ormerod), the hon. secretaries (Mr. Forbes and Mr. Plant), and the retiring auditors (Mr. John Heelis and Mr. Thomas Livesey) were unanimously re-elected. The following gentlemen were elected members of the Council—Mr. William Bryham, Wigan; Mr. John Cross, Wigan; Mr. S. Crowther, Bolton, Mr. R. D. Darbishire, Mr. W. H. Johnson, Mr. K. Knowles, Mr. Clegg Livesey, Mr. Clifford Smith, Mr. J. Wild, Mr. E. W. Binney, Mr. G. C. Greenwell, and Mr. J. S. Martin.

Several new members having been enrolled, the new rules of the society were read by Mr. Plant, and, with certain slight emendations, were approved.

Mr. PLANT intimated that several important papers had been promised for the ensuing session—amongst the others, by Mr. Kendal, of Whitehaven, on the hematite deposits in North Lancashire; by Mr. Greenwell, on the characteristics and formation of basalt; and Mr. Kerr, on ancient lead mines in the Rossendale district. In addition to which there would be a continuation of Mr. Spencer's Halifax geology, or the geology of the Pennine ridge.

The meeting concluded with a vote of thanks to Mr. Knowles, M.P., for his services as President during the past year.

THE SOUTH MIDLAND INSTITUTE OF MINING, CIVIL, AND MECHANICAL ENGINEERS.

An ordinary monthly meeting of members was held on Monday, in their room, the Exchange, Wolverhampton. The PRESIDENT (Mr. B. P. Walker) was in the chair, and there was also present Messrs. W. Blakemore, Fenn, Davies, Hodgkiss, Underwood, Farmer, D. W. Lees (secretary), and others.

Mr. JAMES T. TATLOW, of the Stafford Road Works, Wolverhampton, read a voluminous and exhaustive paper on "Colliery Locomotives," prefacing it with the explanation that the paper was a grouping together of data and suggestions which might tend to prove that, to a far greater extent than at present exists, locomotive power might be economically used amongst our various collieries; and, accepting that the mechanical appliances of the South Staffordshire coal field are in many cases far from satisfactory, the author arrived at the conclusion that there might yet much be done to improve the means of transporting the produce of our mines, notwithstanding the advantages offered for conveyance by the various and intricate ramifications of our railroads and canals. Regarding as practicable the substitution of locomotive engines for horses or the winding-rope, now in vogue, for supplying haulage power in underground workings, he thought that the economy of such a mode would be more strongly marked as the quantity of coal obtained and the distance from the face of the working to the bottom of the shaft increased. For a colliery the working of which would admit of some demand being made upon its resources for ventilation, the ordinary condensing locomotive, such as is used upon our metropolitan lines, might possibly be applied. As to the "fireless" engine, he thought that, with ordinary watchfulness, and judging from the results of our American friends, no fear need be entertained of its success. Mr. Tatlow next directed attention to photographs of Messrs. Hurd and Simpson's patent locomotive engine, that of Mr. Henry Handyside, the ex-

tractor's locomotive of Messrs. Chaplin and Co., Glasgow, sliding boxes for six-wheeled engines, Black, Hawthorn, and Co.'s axle-box, the radial axle-box of the Wm. Bridges Adams, the Fairlie engine, and detailed with much minuteness their respective mechanisms and qualifications. Afterwards, the author considered the following points:—1. The circumstances which would justify the laying down of a colliery line, and the maximum gradients and minimum curves for such a line.—2. The power of an engine necessary for working a colliery line having certain assumed gradients, curves, and traffic.—3. The type and construction of engine.—4. Comparative statement of cost, having regard to capital, outlay, efficient maintenance for haulage performed by means of horses and locomotive engines respectively. The various levels of the district through which any line was required to be made would at once determine the practicability or otherwise of locomotive engine power being applied as the maximum gradient of any line, together with the total length of the line, would determine (unless special arrangements were made at that gradient for reducing the load or increasing the engine-power) the tonnage per engine which might be carried over it. For heavy loads which required to be moved over gradients of ten, and at slow speeds the tramway engines of Messrs. Aveling and Porter, of Rochester, seemed to the author to be exceedingly well adapted. Except under very special circumstances Mr. Tatlow did not think that it would be desirable to use locomotive power where the total distance to be traversed was less than half a mile, because of the loop and return lines, &c., thereby required. If, however, there was a large traffic which needed to be worked it might be a matter of consideration. Explaining that his remarks had special reference to the light colliery line of 3 ft. 3 in. gauge, he recommended the adoption of the 3 ft. 3 in. gauge for colliery lines unless the standard railway gauge of 4 ft. 8½ in. be used. Presuming the resistances to which railway trucks in motion are exposed as gravity, atmospheric resistance, the friction of the axles upon the brass bearings of the vehicle, and the rolling resistance or friction of the wheel upon the rail, more especially when traversing a curve, the author discussed how these resistances might be met, and mentioned that the result of experiments by the best authorities showed the fractional resistances of the axles upon its bearings, plus the rolling resistance of the wheel upon the road, to be upon an average line laid level, and with speeds varying from nine miles to twelve miles per hour, to equal 7 lbs. per ton. Assuming the weight of an engine to be 16 tons, and the gross load of the train at 70 tons, Mr. Tatlow calculated that the gross resistance would be 6922 lbs. For colliery purposes, the four-wheeled engine, from its greater readiness to traverse curves, appeared the most suitable. The author next impressed the necessity for duplicate parts being had of new locomotive-engines, drew attention to an arrangement of white metal brushes for coupling-rods, and expressed an opinion that Mr. Fairlie's engines had in them the embodiment of sound mechanical principles. He had been informed that an engine of the power before specified, and made by Messrs. Manning, Wardle, and Co., had superseded more than 30 horses in shunting in the goods-yard of the North-Eastern Railway Company at Hull. In conclusion, the author calculated the estimated capital cost of locomotive-engines for colliery purposes with the capital cost of equivalent horse haulage power, the former at 3250*l.*, and the latter at 1410*l.*, but he sets the annual cost of steam-power at 1021*l.* 11s. 9d., and that of horse haulage at 2523*l.*

Mr. BLAKEMORE, in proposing the thanks of the Institute to Mr. Tatlow, for his clear, sensible, and scientific paper, said that the subject was one of vast importance, and that engines wherever possible should supersede horse or manual labour. It was a subject deserving national consideration.

Mr. FENN seconded the motion, and it was carried. After Mr. Tatlow had acknowledged the compliment, it was determined to postpone the discussion of so important a topic until the paper had been printed.

IN THE GOODS OF NICHOLAS ENNOR, Deceased.
Pursuant to 22 and 23 Vict., cap. 35.

NOTICE IS HEREBY GIVEN, that ALL CREDITORS and PERSONS having any CLAIMS or DEMANDS upon or against the ESTATE of NICHOLAS ENNOR, late of the parish of St. Teath, in the county of Cornwall, Gentleman, deceased, who died on or about the 23rd day of May, 1874, and whose Will was proved on the 15th day of July, 1874, in the Principal Registry of Her Majesty's Court of Probate, by NICHOLAS MALE, of the borough of Camelford, in the said county of Cornwall, Gentleman, one of the Executors in the said Will named (John Hawke, the other Executor therein named, having renounced the probate and execution thereof), are hereby REQUIRED to SEND IN the PARTICULARS of their CLAIMS or DEMANDS to the said Nicholas Male, or to the undersigned, his solicitor, on or before the 24th day of December next.

And notice is hereby also given, that after that day the said Nicholas Male will proceed to distribute the assets of the deceased among the parties entitled thereto, having regard only to the claims of which the said Nicholas Male shall then have notice, and that he will not be liable for the assets or any part thereof so distributed to any person of whose debt or claim he shall not then have had notice.

THOMAS CREBER, of Camelford, Solicitor for the Acting Executor.

Dated this 22nd day of October, 1874.

DANIEL GEORGE ROUND, Deceased.
NOTICE TO CREDITORS AND OTHERS.

PURSUANT to the 22nd and 23rd Victoria, cap. 35, intituled "An Act to further Amend the Law of Property and to Relieve Trustees," ALL CREDITORS and others having CLAIMS or DEMANDS against or affecting the Estate of DANIEL GEORGE ROUND, late of Portland House, Edgbaston, Birmingham, in the county of Warwick, and of the Hange Colliery and Furnaces, Tividale, Tipton, in the county of Stafford, Esquire, deceased (who died on the 20th day of May, 1874, intestate, and to whose personal Estate and Effects Letters of Administration were, on the 25th day of June, 1874, granted by Her Majesty's Court of Probate out of the District Registry, at Birmingham, to JOSEPH ROUND, of Portland House, Edgbaston, aforesaid, Coal and Iron Master, and BENJAMIN ROUND, of Witley Lodge, Halesowen, in the county of Worcester, Coal and Iron Master, brothers, and two of the next kin of the deceased), are hereby required to SEND IN THEIR CLAIMS OR DEMANDS on or before the 31st day of December, 1874, to the said Administrators, at the offices of the undersigned, their solicitor.

And notice is hereby further given, that after the said 31st day of December, 1874, the said Administrator will proceed to distribute the assets of the said intestate amongst the parties entitled thereto, having regard only to the Debts or Claims of which they shall then have received notice, and that the said Administrators will not be liable for the Assets so distributed, or any part thereof, to any person of whose claim they shall not then have had notice.

WILLIAM S. ALLEN, 35, Waterloo-street, Birmingham
(Solicitor to the said Administrators).

Dated this 10th day of October, 1874.

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Apply to FORCE CRAG LEAD AND BARYTES MINING COMPANY, 69, Close, Newcastle-on-Tyne.

ON SALE,—MASSIVE CRUSHING MILL, with two pairs of 24-in. rolls, in cast metal frames.
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May be had of Mr. JAMES MAY, Secretary of the Nant-y-rhonen Consols, 184 Palmerston-buildings, London, E.C.; or from the Author, post free, for 2s. 7½d
June 15th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the BOSCASWELL DOWNS TIN AND COPPER MINES ASSOCIATION (LIMITED).—TO BE SOLD, under the direction of the Registrar of the said Court, by PUBLIC AUCTION, at and upon the Boscaswell Downs Tin and Copper Mines, in the parish of St. Just-in-Penwith, within the said Stannaries, on Tuesday, the 3rd day of November next, at Twelve o'clock at noon precisely, in such lots as may then be declared (subject to such conditions as shall be then and there produced), the undermentioned

MINING PLANT, MACHINERY, MATERIALS, AND EFFECTS, VIZ.:—

ONE 36 in. cylinder PUMPING ENGINE, 8 ft. stroke, with TWO BOILERS, 8 tons each.
ONE 34 in. PUMPING and STAMPING ENGINE, with fly-wheel, TWO 8 ton BOILERS, 3 stamps axles and 36 heads, with frames, &c.
ONE 32 in. STAMPING ENGINE, 9 ft. stroke, equal beam, 2 fly-wheels, and 10 ton BOILER, 2 stamps axles, with 32 heads, with frames, &c.
ONE 20-horse power portable Robey WINDING ENGINE, with cage and carriage.
A large quantity of from 5 in. to 10 in. pitwork; several hundred fathoms of wire ropes, bridge rails, skip road, runners, ladders, and launders; 60 ft. shears, with 3 ft. shieves and balance bob; 2 ton boiler; about 130 fms. from 10 in. to 7½ in. rods; 30 fms. 1¼ in. flat rods; 8 arm capstan; chains and ropes; 8 in. and 10 in. poles; balance bobs; tram wagons; poppet heads, 55 ft. high, with stays, and 1 7 ft. and 3 5 ft. shieves; ditto, 45 ft. high, with 2 5 ft. shieves; poppet heads, with 14 ft. shieves; 5 ft. holding down shieve; 22 ft. shieve, with stands, cast iron bob; 10 ft. shieve, 2 stools and brasses; 3 ft. and 4 ft. shieves, with stand; 2 4 ft. and 6 2 ft. shieves; 25 2 ft. shieves, with stands; 2 5 ft. shieves; several skips; single crab winch; small poppet heads; 14 ft. shieve: tin dressing plant; account-house furniture; and a great variety of other articles and effects in general use in mines.

To inspect the above, apply to the Bailiff in charge at the Mine; and for further particulars to Mr. CHARLES W. CLINTON, the Official Liquidator of the said Association, at the Stannaries Court Office, in Truro; ROGERS and SON, Solicitors to the said Official Liquidator, Helston.

R. M. PAUL, Truro, Agent of the said Solicitors.

Dated Stannaries Court Office, Truro, the 14th day of October, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the POLHIGEY MOOR MINING COMPANY.—By direction of His Honor, the Vice-Warden, notice is hereby given, that on Wednesday, the 11th day of November next, at the Registrar's Office, at Truro, in the county of Cornwall, at Eleven o'clock in the forenoon, this Court will PROCEED to MAKE a CALL of THREE POUNDS TWELVE SHILLINGS AND SIXPENCE PER SHARE on all the contributories of the said company settled on the List of Contributories as present members thereof.

All persons interested therein are entitled to attend at the time and place aforesaid to offer objections to such call.

CHARLES WILLIAM CLINTON, Official Liquidator.

Dated Stannaries Court Office, Truro, October 26th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN WHEAL VIRGIN MINING COMPANY.—By an Order made by His Honor, the Vice-Warden of the Stannaries, in the said Matter, dated the 28th day of October instant, on the petition of Henry Andrew, of Truro, in the county of Cornwall, Gentleman, a contributory of the said company, IT WAS ORDERED that the said PERRAN WHEAL VIRGIN MINING COMPANY should be WOUND-UP by this Court under the provisions of the Companies Act, 1862.

CARLYON AND PAULL, Truro.
(Solicitors for the Petitioner.)

Dated Registrar's Office, Truro, October 29th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN WHEAL VIRGIN MINING COMPANY.—The Vice-Warden has, by an Order made in the said Matter, bearing date the 28th day of October instant, appointed CHARLES WILLIAM CLINTON, of Truro, within the said Stannaries, an Officer of the said Court, to be OFFICIAL LIQUIDATOR of the above-named company. FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, October 29th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862, and of the PERRAN WHEAL VIRGIN MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above-named company are required, on or before the 7th day of November next, to SEND IN their NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of their SEVERAL CLAIMS against the said company, to CHARLES WILLIAM CLINTON, the Official Liquidator thereof, at the Stannaries Court Offices, Truro. FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, this 29th day of October, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the LEEDS AND ST. AUBYN MINING COMPANY.—By an Order made by His Honor, the Vice-Warden of the Stannaries, in the said Matter, dated the 28th day of October instant, on the petition of George Bazeley, of Penzance, within the said Stannaries, carrying on business there as a General Merchant, under the style or firm of "George Bazeley and Son," claiming to be a creditor of the said company, IT WAS ORDERED that the said LEEDS AND ST. AUBYN MINING COMPANY should be WOUND-UP by this Court under the provisions of the Companies Act, 1862. HODGE, HOCKIN, AND MARRACK, Truro.
(Solicitors for the Petitioner.)

Dated Truro, October 29th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the LEEDS AND ST. AUBYN MINING COMPANY.—The Vice-Warden has, by an Order made in the above Matter, bearing date the 28th day of October inst., appointed JOHN HENRY HAMLEY, of Truro, within the said Stannaries, an Officer of the said Court, to be OFFICIAL LIQUIDATOR of the above-named company. FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, October 29th, 1874.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the LEEDS AND ST. AUBYN MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above-named company are required, on or before the 7th day of November next, to SEND IN their NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of their SEVERAL CLAIMS, to JOHN HENRY HAMLEY, the Official Liquidator of the said company, at the Stannaries Court Office, in Truro. FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, October 29th, 1874.

IN LIQUIDATION.
IN THE MATTER OF THE COMPANIES ACTS, 1862 AND 1867;
AND OF THE
NEW BRYNPOSTIG LEAD MINING COMPANY (LIMITED).

FOR SALE, BY TENDER, the LEASE of the ABOVE-NAMED MINE; also the undermentioned PLANT and MACHINERY, either together or separately:—

ONE 12 in. cylinder STEAM ENGINE (rotary), with BOILER and fittings, complete; drawing machine; shaft tackle; wire rope; 50 fms. 6 in. pumps; pump rods and brackets, complete; 50 fms. of ladders.

The property is situate in the parish of Llandinham, in the county of Montgomery, about three miles from Llanidloes, and is held for an unexpired term of 15 years.

The property may be viewed, and full particulars obtained, by application to Mr. JOHN KITTO, Mining Engineer, Llanidloes.

Tenders must be sent to the Liquidator, GEORGE BEDFORD, 27, Lombard street, London, not later than the 14th day of November next. Conditions can be seen at the Liquidator's office. GEORGE BEDFORD, Liquidator.

IN LIQUIDATION.
IN THE MATTER OF THE CWM ELAN LEAD MINING COMPANY (LIMITED).

IMPORTANT MINING PROPERTY, known as the CWM ELAN LEAD MINE, situate in the parish of LLANSAINT FRAED CWMTOYDDWR, in the county of RADNOR, NORTH WALES, together with the VALUABLE PLANT and MACHINERY.

MR. F. INMAN SHARP WILL SELL, BY AUCTION, at the London Tavern, Bishopsgate-street, London, on Thursday, 12th November, 1874, at One for Two o'clock, by order of the Liquidators of the above company, the

CWM ELAN LEAD MINE,

Radnorshire, together with the PLANT and MACHINERY. The property is leasehold, for a term of 21 years from Christmas, 1871, subject to a royalty and dead rent.

Particulars and conditions of sale had of CHARLES ELEY, Esq., 110, Cannon-street, City; and of WILLIAM LIDDELL, Esq., 15, Union-court, Old Broad-street, the Liquidators of the Cwm Elan Lead Mining Company (Limited); of T. M. HARVEY, Esq., solicitor, 6, Old Jewry; and of the Auctioneer, 16, Abchurch-lane, London.

FOR SALE, a HORIZONTAL HIGH-PRESSURE ENGINE, 13½ in. cylinder, 24 in. stroke; HORIZONTAL HIGH-PRESSURE ENGINE, 14 in. cylinder, 30 in. stroke; and a PAIR of GUN-METAL PUMPS, 6 in. diameter, 12 in. stroke; also, a TUBULAR BOILER, up to 60-horse power, of Yorkshire plates throughout.
Apply to W. T. HENDRY and Co., 2, Wilson-street, London E.C.

TUESDAY, NOVEMBER 10TH, 1874, AT TWELVE O'CLOCK.

JOHN THOMAS and W. T. DAVEY, Auctioneers, Redruth, WILL SELL, BY PUBLIC AUCTION, on Tuesday, November 10th, 1874, at Twelve o'clock precisely, the

MACHINERY AND MATERIALS

On the Boscean and Wheal Call parts of the Wheal Cunning United Mines, in the parish of St. Just, in the county of Cornwall, in lots to suit the convenience of purchasers.

ON WHEAL CALL PART.

ONE 87 in. cylinder PUMPING ENGINE, 7 ft. stroke, equal beam, with 1 8 ton BOILER.

Shaft tackle complete; balance bob; 26 9 ft. 7 in. pumps; 20 9 ft. 6 in. ditto; 22 9 ft. 4 in. ditto; 1 9 in. H and top doorpiece; 1 8 in. ditto; 1 6 in. ditto; 1 4 in. ditto; 90 fms. 9 in. wood rods; rod plates and bolts; 120 fms. 1⅛ in. round iron rods; 2 tram wagons; 180 fms. diagonal skip road; 90 fms. skip road; 100 fms. ladders; 4 skips; smiths' tools, miners' tools, &c.

ON THE BOCEAN PART.

ONE 36 in. cylinder PUMPING ENGINE, 9 ft. by 7 ft. stroke, with 2 BOILERS of 8 tons and 6 tons respectively.

ONE 24 in. STAMPING ENGINE, 8 ft. stroke, with 2 BOILERS, 16 tons, with tin under the stamps and tin leavings.

TWO FLY WHEELS, 2 wrought shafts, 2 driving wheels, 32 lifters, 32 heads and bottoms, 32 tongues.

ONE 20 in. double-acting WINDING ENGINE, with fly wheel, cage, crown and spur wheel, plumber blocks, &c.

140 fms. 2 in. round iron rods; 3 balance bobs, complete; 2 angle bobs; 60 fms. 1 in. round iron rods; 70 fms. bridge rails; 100 fms. tram bars, 2½ by ⅝; 46 9 ft. 8 in pumps; 20 9 ft. 7 in. ditto; 30 9 ft. 6 in. ditto; 100 fms. 8 and 6 in. wood rods; rod plates and bolts; 1 8 in. H and top doorpiece; 1 7 in. ditto; 1 6 in. ditto; 3 plunger poles, complete.

Angle bob; 220 fms. skip road; 150 fms. ladders; 2 stamp axles; 200 fms. whim chain; 2 shaft tackles; 300 fms. 4 in. wire-rope; drying tube; 4 surface tram wagons; 3 underground ditto; winch; pulley stands and sheaves; dressing tools; 4 skips; miners tools, &c.

Refreshments at Twelve precisely.

To view the same, and for further particulars, apply to RICHARD BOYNS, Esq., Boswedden House, St. Just; or to the Auctioneers, at their offices, Redruth.

Dated October 27th, 1874.

THREE VALUABLE IRON AND TIN MINE SETTS, WITH THE MACHINERY AND MATERIALS THEREON, FOR SALE,

TO BE SOLD, BY TENDER, unless previously disposed of by Private Contract (as going concerns), for an unexpired term of about 19 years, all those THREE VALUABLE RED and BROWN HEMATITE IRON and TIN MINES, known by the names of

HALLEW, BURNEY HOUSE, AND LANGEW MINES,

Situate in the parishes of Roche and Withiel, Cornwall, together with the MACHINERY and MATERIALS, in One or more Lots, at the option of the persons tendering, the property of the Mid-Cornwall Mines (Limited).

To view the said mines and materials, apply to Mr. LANCASTER, Cornubia Mine, Roche.

Surface, underground plans, sections, and a detailed inventory of the machinery and materials may be seen at the office of Messrs. HANCOCK and SONS, Auctioneers and Surveyors, Sydney-place, St. Austell, from whom further particulars can be obtained respecting the said mines; or at the offices of the company, 40, Brown-street, Manchester, where tenders will be received until the 25th day of November, 1874.

For particulars in respect of leases, &c., application must be made to Messrs. SHILSON, COODE, and Co., Solicitors, St. Austell, Cornwall.

The company does not bind itself to accept the highest or any tender.

N.B.—Iron ore from these mines is on surface, and samples may be taken by parties intending to tender.—Dated 21st October, 1874.

COLLIERY FOR SALE.

TO BE SOLD, or LET, on ROYALTY, on favourable terms, a GOOD GOING COLLIERY, in NORTH WALES, producing HOUSE, GAS, and STEAM COALS.

Particulars on application to "W. H. R.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

LEAD MINE NEAR CARSPHAIRN, STEWARTRY OF KIRKCUDBRIGHT.

TO BE LET, for such number of years as may be agreed upon, from and after Martinmas, 1874,

THE WOODHEAD LEAD MINE,

On the CRAIGENGILLAN ESTATE, situate in the parish of CARSPHAIRN and Stewartry of KIRKCUDBRIGHT.

The Mine was opened in 1838, has been wrought ever since, and has yielded a large quantity of lead of the finest quality.

The PLANT, MACHINERY, &c., can be had at a valuation.

JAMES M'CALL, at the Mine, will show the underground workings, as also the plans and sections; and for further particulars application may be made to Mr. ALEXANDER M'CUBBIN, Solicitor, Ayr; or to Mr. THOS. SMITH, Land Steward Berbeth Mains, Dalmellington, Ayrshire.

Ayr, 20th October, 1874.

CHINA CLAY AND BRICK WORKS.

TO BE DISPOSED OF, ONE-QUARTER PART of a WORKS capable of returning £15,000 per year. The purchase-money to be expended in laying out and extending the works.

Address, "Kaoline," MINING JOURNAL Office, 26, Fleet street, London.

FOR SALE:—
FOUR SPLENDID DOUBLE-FLUE BOILERS, 30 ft. long, 7 ft. diameter, with all fittings, complete. Three can be seen working at 70 lbs. pressure (great bargains); one can be seen at Washington.
ONE MULTITUBULAR BOILER, 26 ft. by 7 ft., will work at 60 lbs.—all the fittings.
ONE PAIR of new 12 in. cylinder WINDING ENGINES.
ONE PAIR ditto, 16½ inch cylinders—very cheap.
TWO 9 in. cylinder PORTABLE ENGINES.
TWO 18 in. cylinder HORIZONTAL ENGINES, very strong.
ONE 18 in. ditto, for hauling.
TWO 4 in. RAM DONKEY PUMPS.
TWO 7½ in. SCREW CUTTING LATHES.
TWO 9¼ in. ditto.
ONE 25 in. and ONE 30 in. cylinder HORIZONTAL ENGINES.
ONE FLY WHEEL, 16 ft. diameter, 6½ tons weight.
ONE SINGLE-FLUE BOILER, 18 ft. by 5 ft., all fittings complete.
ONE 8 in. cylinder TANK LOCOMOTIVE ENGINE, 4 ft. 8½ in. guage.
ONE 11 in. ditto.
ONE VERTICAL BOILER, 24 ft. high 7 ft. diameter—all Low Moor plates.
TWO GALLOWAY BOILERS, 28 ft. by 7 ft.—all the fittings.
ONE FOUNDRY JIB CRANE, 24 ft. radius, very strong.
TWO very large direct-acting PUMPING ENGINES, cylinders 106 in. diameter, stroke 84½ ft.—will be sold separately or together. Lithograph and specification on application. Very cheap.
Apply to Mr. JOHN BURLINSON, 32, Argyle-square, Sunderland.

TO CAPITALISTS.

FOR SALE,—IN NEW SOUTH WALES,—
1340 ACRES TIN LANDS,—Lode and Stream.
2430 ACRES COPPER LANDS (portions freehold).
2112 ACRES IRON AND COAL.
2250 ACRES COAL (on sea coast).
4000 ACRES COAL (inland, on railway line).
200 ACRES KEROSENE SHALE.
200 ACRES PLUMBAGO.
105 ACRES FREEHOLD GOLD DEPOSIT (Brown's Creek).

The above properties are all first-class, and on or near railway lines or water carriage, and are the very "pick" of their respective districts (being some of the first selections made).

Liberal terms, either as to purchase or working on royalty, will be given to parties able to carry out arrangements.

Apply to the owner,—
CHARLES W. WEEKES, Circular Quay, Sydney, N.S.W.

PIT SINKING AND WINDING COAL.

FOR SALE, and ready for immediate delivery, a 14, 18, 25, and 35 horse power PORTABLE STEAM ENGINES, with link motion, reversing gear, winding drum, gear, &c., complete.

Also, a 9 and 18 horse power VERTICAL ENGINES, with link motion reversing gear, suitable for mining operations.

FOR SALE,—An excellent PORTABLE STEAM ENGINE; and a 7-ft. PAN MORTAR MILL. Apply to—
BARROWS AND STEWARTS, ENGINEERS, BANBURY.

FOR SALE, CORNISH ROTARY ENGINE, two fly-wheels, about 20 tons; TWO BOILERS, 20 tons; THREE STAMPS AXLES, five cams to the round, two sets complete, with lifters, &c., for stamping. To be sold together or separately.
Apply to Mr. HOWARD, Auctioneer, St. Columb, Cornwall.

TO BE SOLD.

BEAM ENGINE, 16½ inch cylinder, high pressure or condensing in good working trim, with foundation stones, complete.

PORTABLE ENGINES, for SINKING, MINING, or GENERAL PURPOSES, from 10 to 30-horse power, IN STOCK, or in PROGRESS OF CONSTRUCTION.
Full particulars on application to—
BADGER AND SON,
ENGINEERS, ROTHERHAM.

MINING MACHINERY AND MATERIALS FOR SALE, comprising STEAM ENGINES, WATER WHEELS, PITWORK, and other MINE MATERIAL.—Apply to—
W. TREGAY, REDRUTH.

CORNISH PUMPING ENGINES FOR SALE, VIZ.:—
ONE 60 in. CYLINDER, 9 ft. stroke; with ONE BOILER.
ONE 40 in. ditto, 9 ft. stroke; with or without BOILER.
These engines are in first-class condition.
Apply to JOHN HOCKING and SON, Engineers, Trewirgie-terrace, Redruth, Cornwall.

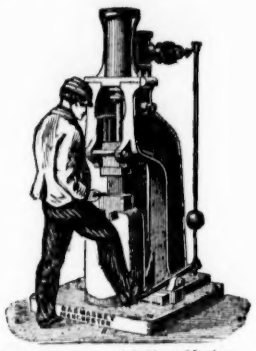
B. & S. MASSEY, OPENSHAW, MANCHESTER.

PRIZE MEDALS AWARDED:—Paris, 1867 Havre, 1868; Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873.

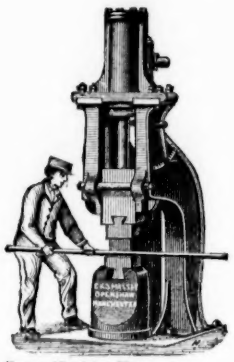
Patentees and Makers of **Double** and **Single-acting STEAM HAMMERS** of all sizes, from ½ **cwt.** to **20 tons,** with self-acting or hand motions, in either case giving a perfectly **DEAD BLOW,** while the former may be worked by hand when desired. **Large Hammers,** with **Improved Framing,** in **Cast** or **Wrought Iron. Small Hammers,** working up to 500 blows per minute, in some cases being **worked by the Foot** of the Smith, and not requiring any separate Driver.

SPECIAL STEAM STAMPS, of great importance for Forging, Stamping, Punching, Bolt-making, Bending, &c.

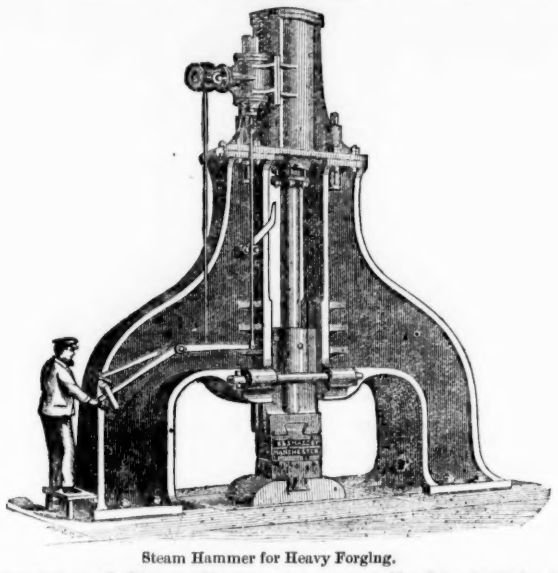
STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Coppersmiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c.; also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks, breaking Pig-iron, &c.



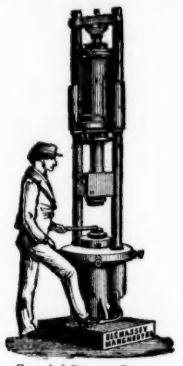
Small Hammer with Foot Motion.



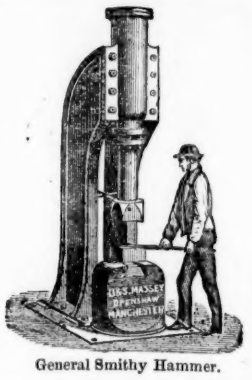
General Smithy Hammer.



Steam Hammer for Heavy Forging.



Special Steam Stamp.



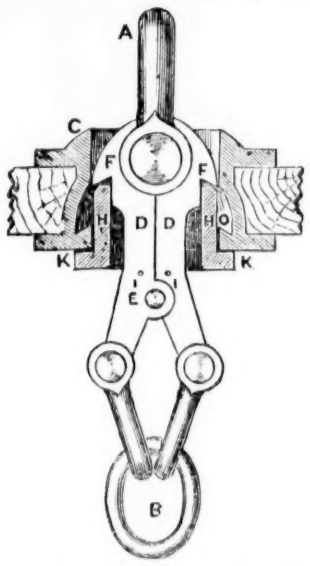
General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

OVERWINDING IMPOSSIBLE.

WALKER'S DETACHING HOOK,

FOR COLLIERIES AND BLAST-FURNACE HOISTS.



SIX LIVES SAVED.

"Walker's Hook, at Tockett's sinking, has *saved six men's lives.* On the 6th instant, the kibble was overwound, and but for the hook would have fallen down the pit, where six men were working 120 ft. below, all of whom would probably have been killed. Thanks, however, to Mr. Walker's invention, the rope alone passed harmlessly over, the kibble remained suspended, and in half-an-hour everything was working as if nothing had occurred."—From the *Northern Echo,* August 20, 1874.

Full particulars may be obtained from the manufacturers,—

THOMAS WALKER & SON,

58, OXFORD STREET, BIRMINGHAM.

MINERS' LAMP

AND

GAUZE MANUFACTORY,

Established Half-a-century.

JOSH. COOKE AND CO. J.C B TRADE MARK

SAFETY LAMPS

MADE to DRAWING, DESCRIPTION, or MODEL. Illustrated Price Lists free, by post or otherwise.

VALUABLE TESTIMONIALS FROM EMINENT FIRMS.

MIDLAND DAVY LAMP WORKS,

20, &c., LOWER LAWLEY STREET,

BIRMINGHAM.

Specimens may be seen at the INTERNATIONAL EXHIBITION, Kensington Gore, CLASS XIV., DIVISION 3, No. 6905.

INCREASED VALUE OF WATER-POWER.

THE EXTRAORDINARY ADVANCE in the PRICE of COALS has DIRECTED more ATTENTION to WATER-POWER, and to the BEST MANNER of APPLYING IT. For many years it has been, to a great extent, neglected and undervalued. One great objection to it has been the variable nature of most streams in these countries, having abundance of water during the winter half-year, and very little in the dry season. No kind of wheel hitherto known was able to give the proper proportion of power from the smaller quantities of water, so that it became the practice very generally to use steam entirely during the summer half of the year, letting the water go to waste. This is now completely prevented, and the full available power can be obtained from a stream at every season by using

MACADAM'S VARIABLE TURBINE.

This wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and, in this way, always assists it by whatever amount of power the water is capable of giving, and, therefore, saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the wheel is not affected by floods or back water.

References to places where it is at work will be given on application to the makers—

MACADAM BROTHERS AND CO., ENGINEERS, BELFAST.

Just published, Free Edition.

GUIDE TO HEALTH; or, ADVICE AND INSTRUCTIONS FOR THE CURE OF NERVOUS DEBILITY.—A New Medical Work on the Treatment of Local Debility, Consumption, Loss of Memory, Physical Depression, Indigestion, and all diseases resulting from loss of nerve power. Illustrated with cases and testimonials. Sent free for two stamps.—Dr. SMITH will, for the benefit of country patients, on receiving a description of their case, send a confidential letter of advice.—Address, Dr. H. SMITH, 9 Burton-crescent, London, W.C.

BARROWS & STEWART,

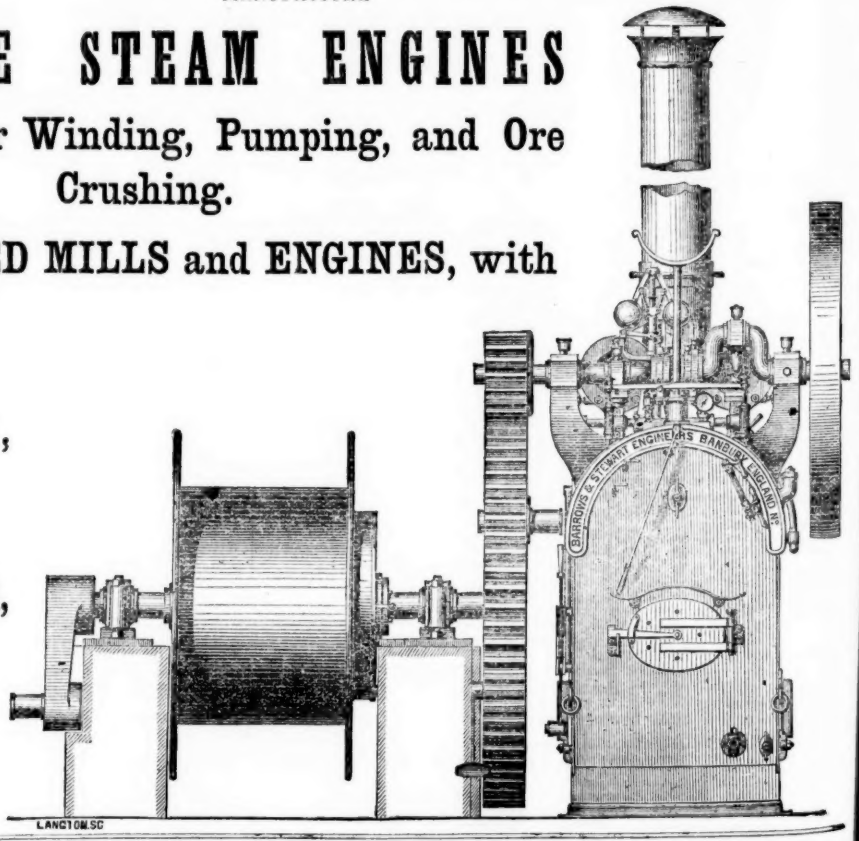
ENGINEERS, BANBURY,

MANUFACTURE

PORTABLE STEAM ENGINES

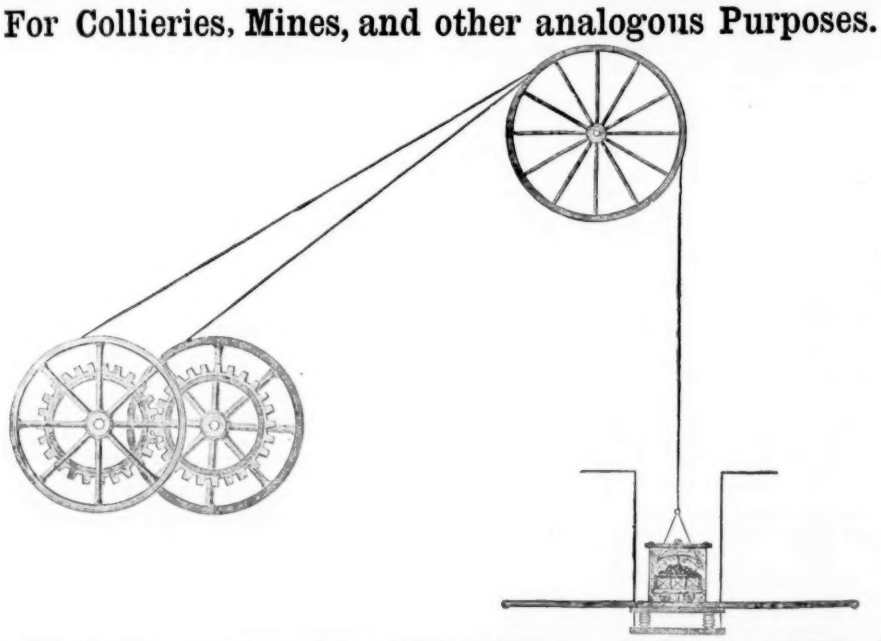
With Gear for Winding, Pumping, and Ore Crushing.

Also, COMBINED MILLS and ENGINES, with or without BOILERS, for Grinding Cinders, Sand, Mortar, &c.



WILSON'S PATENT WINDING GEAR,

For Collieries, Mines, and other analogous Purposes.



The ADVANTAGES of this Patent is to ECONOMISE the WEAR and TEAR of the ROPES and MACHINERY used in drawing or lowering weights in Mines, or any other similar purposes.

At a mere nominal cost this patent can be applied to any or every Mine now in operation, while its application to any new plant will scarcely make any difference in time or cost.

Applications for Licence to use the said Invention can be made to the Patentee,—

R. WILSON, PHŒNIX WORKS, ROTHERHAM.

Full particulars on application can be had as to terms, drawings, &c. &c.

DYNAMITE

FOR BLASTING PURPOSES, can now be supplied in packages, containing 50 lbs. each, for export to any part of the World.

Nobel's Dynamite, or Safety Giant Blasting Powder,

Is the CHEAPEST and MOST POWERFUL EXPLOSIVE for every kind of MINING and QUARRYING OPERATIONS; for blasting in hard or soft, wet or dry ROCKS; for clearing land of TREE ROOTS and BOULDER STONES; for rending massive BLOCKS of METAL; for SUBAQUEOUS and TORPEDO purposes; and for recovering or clearing away of WRECKS, &c.

ITS SAFETY is evidenced by the total ABSENCE OF ACCIDENTS in transit and storage; it is insensible to heavy shocks, its GIANT POWER being only fully developed when fired with a powerful percussion detonator, and hence its great safety.

As a **SUBSTITUTE FOR GUNPOWDER** its advantages are the GREAT SAVING OF LABOUR, rapidity and INCREASE OF WORK done, FEWER and smaller BORE-HOLES required, greater depth blasted, safety in use, NO DANGER FROM TAMPING, absence of smoke, unaffected by damp, &c.

For information, apply to the—

BRITISH DYNAMITE COMPANY (LIMITED), GLASGOW;

OR AT THE

London Export Office, 85, GRACECHURCH STREET, LONDON, E.C.

THE DARLINGTON ROCK BORER.

PATENTED IN GREAT BRITAIN, PRUSSIA, FRANCE, AND VARIOUS CONTINENTAL COUNTRIES.

Makes 300 to 1000 Blows per Minute, as may be required, without Valve or Complicated Gear.

DRIVEN WITH STEAM OR COMPRESSED AIR.

SPECIALLY SUITABLE FOR RAILWAY, QUARRY, AND MINE WORK.

For price and particulars, apply to—

JOHN DARLINGTON,

2, COLEMAN STREET BUILDINGS, MOORGATE STREET, LONDON.

THE "CRANSTON" ROCK DRILL,

Suitable for QUARRYING and OPEN-CUTTING, SINKING SHAFTS, SUBMARINE BLASTING, TUNNELLING, DRIVING ADITS, &c., is now in successful operation in various parts of the World.

Has over SEVEN HUNDRED STROKES PER MINUTE, with a blow of 200 lbs. each stroke.

BORES GRANITE 12 inches per minute.

STEAM BOILERS; AIR COMPRESSORS; BLOWING, PUMPING, WINDING, and all other MINING MACHINERY supplied.

BEST IRON and FLEXIBLE TUBING supplied at lowest rates.

For prices, estimates, and other particulars, apply to—

J. G. CRANSTON, PATENTEE, 22, GREY STREET,

NEWCASTLE-ON-TYNE.

MINING MACHINERY AND TOOLS.

THE TUCKINGMILL FOUNDRY COMPANY,

85, GRACECHURCH STREET, LONDON, E.C. WORKS: TUCKINGMILL.

MANUFACTURERS of every description of MINING MACHINERY, TOOLS, MILLWORK, PUMPING, WINDING, & STAMPING ENGINES.

SOLE MAKERS OF

BORLASE'S PATENT ORE-DRESSING MACHINES AND PULVERISERS.

PRICE LISTS CAN BE HAD ON APPLICATION, AND

SPECIAL QUOTATIONS WILL BE GIVEN UPON INDENTS AND SPECIFICATIONS.

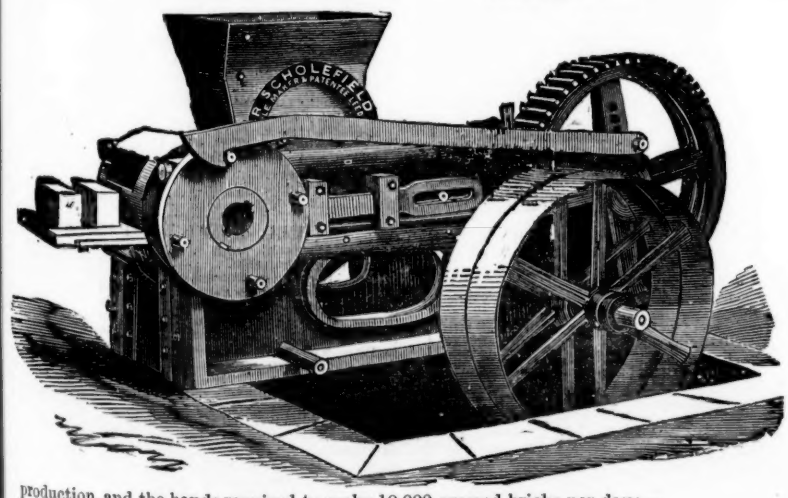
TUCKINGMILL FOUNDRY AND ROSEWORTHY HAMMER MILLS.

TUCKINGMILL, CORNWALL, AND 85, GRACECHURCH STREET, LONDON, E.C.

R. SCHOLEFIELD'S

LATEST PATENT BRICK-MAKING MACHINE.

PATENTED 1873.



R. S. begs to call the attention of all Colliery Owners in particular to his PATENT SEMI-DRY BRICK MACHINE, and the economical method of making bricks by his patent machinery from the refuse that is taken from the pits during the process of coal-getting, which, instead of storing at the pit's mouth (and making acres of valuable land useless), is at once made into bricks, at a very small cost, by R. S.'s Patent Brick-making Machinery. If the material is got from the pit hill, the following is about the cost of production, and the hands required to make 10,000 pressed bricks per day:—

2 men digging, each 4s. per day	£0 8 0
1 man grinding, 4s. 6d. per day	0 4 6
1 boy taking off bricks from machine, and placing them in barrow ready for the kiln, 2s. per day	0 2 0
1 boy greasing, 1s. 6d. per day	0 1 6
1 engine-man, 5s. per day	0 5 0
1 man wheeling bricks from machine to kiln, 4s. per day	0 4 0
Total cost of making 10,000 pressed bricks	£1 5 0, or 2s. 6d. per 1000.

(SETTING AND BURNING SAME PRICE AS HAND-MADE BRICKS.)

N.B.—Where the material can be used as it comes from the pit, the cost will be reduced in digging.

As the above Machinery is particularly adapted for the using up of shale, bind, &c., it will be to the advantage of all Colliery Owners to adopt the use of the said Brick-making Machinery.

THE MACHINES CAN BE SEEN IN OPERATION AT THE WORKS OF THE SOLE MAKER AND PATENTEE DAILY.

COLUMBA STREET, WOODHOUSE LANE, LEEDS.

DUNCANS' LUBRICATING OILS

WARRANTED FREE FROM GUMMINESS.

PALE INSTAR SPERM, OLIVE, and LARD, from 2s. 9d. to 3s. 9d.

"DON ECONOMIC" LUBRICATING OIL, from 2s. 3d. to 2s. 6d. per gallon, according to quantity.

Mr. Nasmyth, the inventor of the Steam Hammer, says—"I am highly pleased with it as a most effective and durable lubricator, having remarkable qualities in the way of setting free bearings that had got fast, or nearly so, by the sort of glutination which Gallipoli and such like oils are so liable to in the course of time."

Consignees put on most favourable terms.

DUNCAN BROTHERS, SOLE MANUFACTURERS,

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COPPEE COKE OVENS.

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This company grant licenses, under their patents, for the use, singly or in combination, of the most approved machinery for dressing ores, comprising Stamps Jiggers, Classifiers, and Buddles.

MR. GEORGE GREEN, Mechanical Engineer to the above Company, SUPPLIES MACHINES under the above Company's Patents for DRESSING all METALLIC ORES. Dressing-floors having these Machines possess the following advantages:—

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EXTRACTS FROM TESTIMONIALS RECEIVED:—

Mr. C. E. BAINBRIDGE, of the London Company's Mines, Middleton-in-Teesdale, by Darlington, writing on the 27th September, 1873, says—"After a full season's experience of the very complete Dressing Machine erected by you at our Colberry Mines, we are fully satisfied with our decision to adopt your patents in preference to all others. The machinery does its work as well as we can desire, and better than we anticipated. We are now getting through 70 tons of orestuff per day, of rich quality. Without your machinery we should have been at a stand still, for we cannot get hands to supply our wants elsewhere. It saves fully one-half of the old wages, and vastly more on the wages we now give, and the saving in ore is not much short of 10 per cent. You can quote from this letter as you think proper."

Mr. COULTAS DODSWORTH, of Haydon Bridge, writes, on the 15th January, 1874:—"I have just returned from the Stonecroft and Greyside Mines, where I have seen your 'Patent Ore Dressing Machinery' at work, with which I must say, I was highly pleased. It is decidedly the best machinery I have ever seen for the purpose, the results being as near perfection as possible, and I am quite sure its use in this case will be a very great saving to the company. No large mining establishment should be without your machinery, especially when labour is difficult to procure—a mere fraction of the hands being only required as against the old system, and the work altogether much better done, and a great saving of ore effected. I have heard it said that your machinery is better adapted for poor than for rich ores, but from what I have seen to-day I am quite confident it will do for any kind of ores. I beg not only to congratulate, but also to compliment, you on the great success of your 'Patent Ore Dressing Machinery.' You may use this letter as you think proper."

Mr. MONTAGUE BEALE, Managing Director of the Cagliara Mining Company (Limited), says, on May 15th, 1873:—"I have much pleasure in speaking of the great efficiency of your 'Patent Dressing Machinery,' as erected by you at our mines at Rosas, in the Island of Sardinia. You will remember it has always been considered impossible to dress, or rather separate, the minerals our ores contain by machinery, but our captain assures me he gets a constant return of 76 per cent. of lead with the greatest ease, and I know by the returns we are realising the best market price. I consider this company is much indebted to you for the success you have achieved at so small cost. It may interest you to know, from my experience in several of the British possessions, including the whole of the Australian Colonies, that my opinion is I have never seen any dressing machinery that can efficiently, and at so small a cost, dress, and separate metallic ores, however close the mechanical mixture may be, as yours. You can use this letter in any way you like."

The most satisfactory testimonials also have been received from the GREENSIDE MINE COMPANY, Westmoreland; the TALARGOCH MINING COMPANY, North Wales, and others. Copies of these may be had from Mr. GREEN.

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Published by J. B. JONES, Boutport-street, Barnstaple, Devon to whom all orders, by post or telegraph should be sent.

THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
1500	Alderley Edge, *c*, Cheshire*	10 0 0	— ...	...	12 1 8...	0 5 0	...Apr. 1874
26000	Allt-y-Crib, *l*, Talybont*	2 0 0	— ...	...	0 0 6...	0 0 6	...Feb. 1873
30000	Bampfylde, *c, i, mn.*, Devon*	1 0 0	— ...	5⅜ 5⅝	0 2 0...	0 2 0	...June 1873
5500	Blaen Caelan, *s-l*, Cardigan* (£4 sh.)	3 10 0	— ...	...	0 10 9...	— ...	—
200	Botallack, *t, c*, St. Just§	116 5 0	22½...	21 22	619 15 0...	5 0 0	...Aug. 1872
10000	Bronfloyd,*† *s-l*, Cardigan	1 7 6	— ...	...	2 2 0...	0 0 6	...Jan. 1872
4000	Brookwood, *c*, Buckfastleigh	1 16 0	3½...	4½ 5	2 18 6...	0 4 0	...July 1874
3348	Cargoll, *s-l*, Newlyn§	5 4 5	1 ...	1¾ 2	4 16 3...	0 12 6	...Oct. 1872
6400	Cashwell, *l*, Cumberland*	2 10 0	— ...	...	1 6 6...	0 2 6	...Aug. 1873
1000	Carn Brea, *c, t*, Illogan†	35 0 0	59 ...	55 57½	308 0 0...	1 0 0	...Feb. 1874
6000	C.th. & Jane, *l.** Penrhyndendraeth	5 0 0	— ...	...	0 7 6...	0 7 6	...June 1873
2450	Cook's Kitchen, *t*, Illogan†§	20 4 9	10 ...	9 9½	11 17 0...	0 7 6	...Jan. 1873
10240	Devon Gt. Consols, *c*, Tavistock†* §	1 0 0	1½...	1¼ 1⅝	116 10 0...	0 12 0	...May 1872
4296	Dolcoath, *c, t*, Camborne	10 14 10	47½...	45 47	105 4 2...	0 10 0	...Oct. 1874
6500	Drake Walls, *t, c*, Calstock	5 0 0	— ...	...	0 2 0...	0 2 0	...July 1874
10000	East Balleswidden, *t*, Sancreed*	1 0 0	— ...	...	0 2 11...	0 0 5	...Feb. 1874
6144	East Caradon, *c*, St. Cleer†	2 14 6	1¾...	1 1¼	14 19 0...	0 2 0	...Oct. 1872
300	East Darren, *l*, Cardiganshire	32 0 0	— ...	...	224 10 0...	1 0 0	...Oct. 1874
6400	East Pool, *t, c*, Illogan	0 9 9	8½...	8 9	13 11 3...	0 2 6	...May 1873
1906	East Wheal Lovell, *t*, Wendron*‡...	5 19 0	11½...	10 11	20 7 6...	0 7 6	...Oct. 1874
5000	Exmouth, *s-l*, Christow	0 7 6	— ...	...	0 1 0...	0 1 0	...May 1873
2800	Foxdale, *l*, Isle of Man*†	25 0 0	— ...	...	80 15 0...	0 10 0	...Sept. 1872
40000	Glasgow Cara., *c** (30,000 £1 p., 10,000 15s. p.)	1 0 0	1¼...	1¼ 1½	0 5 10...	0 1 0	...Aug. 1874
15000	Great Laxey, *l*, Isle of Man*	4 0 0	12½...	11 12	17 3 0...	0 6 0	...Oct. 1874
25000	Great West Van, *l*, Cardigan*	2 0 0	— ...	...	0 2 0...	0 1 0	...Aug. 1874
5908	Great Wheal Vor, *t, c*, Helston†§	40 15 0	— ...	...	15 19 6...	0 2 6	...June 1872
6400	Green Hurth, *l*, Durham*	0 6 0	5½...	5 5⅛	1 12 0...	0 4 0	...Oct. 1874
20000	Grogwinion, *l*, Cardigan*	2 0 0	3¼...	3 3½	0 0 8...	0 0 8	...July 1874
1024	Herodsfoot, *l*, near Liskeard†	8 10 0	3½...	3 4	62 5 0...	0 15 0	...Oct. 1872
18000	Hingston Downs, c,Calstock*† (£1 sh.)	2 5 0	1½...	⅞ 1	4 3 0...	0 5 0	...Dec. 1872
25000	Killaloe, *sl*, Tipperary	1 0 0	— ...	...	0 3 11½	0 0 6	...Mar. 1873
400	Lisburne, *l*, Cardiganshire	18 15 0	— ...	...	564 10 0...	1 0 0	...July 1874
5120	Lovell, *t*, Wendron	0 10 0	— ...	...	0 17 6...	0 1 6	...Jan. 1874
11000	Melindur Valley, *l*, Cardigan*	3 0 0	3 ...	3 3¼	0 3 7...	0 3 7	...June 1874
9000	Minera Mining Co., *l*, Wrexham*..	5 0 0	15 ...	10 15	63 13 2...	0 1 6	...Sept. 1874
20000	Mining Co. of Ireland, *cl, c, l**	7 0 0	— ...	...	0 8 0...	0 3 6	...July 1872
12000	North Hendre, *l*, Wales	2 10 0	— ...	...	0 17 6...	0 2 6	...Oct. 1874
2000	North Levant, *t, c*, St. Just§	11 9 6	4½...	4 4¼	4 13 0...	0 12 0	...Sept. 1873
7000	Old Treburgett,* *s-l*, ordinary shares	1 0 0	⅝...	½ ⅝	0 0 9...	0 0 9	...Feb. 1874
9000	Old Treburgett,* *s-l* (10 per ct. pref.)	0 10 0	½...	½ ½	0 0 10½	0 0 10½	Feb. 1874
5694	Pedn-an-drea, *t*, Redruth§	9 2 0	— ...	...	0 5 0...	0 5 0	...Nov. 1871
5000	Penhalls, *t*, St. Agnes	3 0 0	1½...	1½ 1¾	3 7 0...	0 2 0	...Oct. 1874
50000	Penstruthal, *t, c*, Gwennap	2 0 0	⅜...	½ ⅝	0 1 0...	0 1 0	...Nov. 1873
8000	Phœnix, *t, c*, Linkinhorne§	4 13 4	4 ...	4½ 5	39 19 10...	0 4 0	...Nov. 1872
1772	Polberro, *t*, St. Agnes	15 0 0	— ...	...	1 12 6...	0 5 0	...Mar. 1872
18000	Prince Patrick,* *s-l*, Holywell	1 0 0	— ...	...	0 7 0...	0 2 0	...July 1874
1120	Providence, *t*, Lelant†§	16 16 7	4¾...	4½ 5	104 12 6...	0 10 0	...Sept. 1872
2000	Queens, *s-l*, Holywell*	2 0 0	2¾...	2½ 2¾	0 2 0...	0 2 0	...Sept. 1874
2000	Roman Gravels, *t*, Salop*	7 10 0	14¾...	13½ 14½	4 2 0...	0 8 6	...Aug. 1874
10000	Shelton, *cl, t*, St. Austell	1 0 0	— ...	...	0 1 0...	0 1 0	...Feb. 1872
512	South Caradon, *c*, St. Cleer	1 5 0	100 ...	95 100	717 0 0...	2 0 0	...Oct. 1874
5000	South Carn Brea, *c, t*, Illogan	1 17 6	1⅜...	1½ 1⅝	0 10 0...	0 2 6	...July 1872
6000	South Darren, *l*, Cardigan*	3 6 6	— ...	...	1 1 6...	0 1 6	...Nov. 1870
10000	So. Pr. Patrick,* *s-l*.(8000 sh. issued)	1 0 0	3 ...	2½ 3	0 9 0...	0 4 0	...Nov. 1871
8771	St. Just Amalgamated, *t**	3 10 0	— ...	...	0 9 0...	0 4 0	...Nov. 1871
12000	Tankerville, *l*, Salop*	6 0 0	7¾...	7 7½	3 8 0...	0 6 0	...Feb. 1873
6000	Tincroft, *c, t*, Pool, Illogan†	9 0 0	31 ...	29½ 30½	47 8 6...	0 5 0	...Aug. 1874
15000	Tretoil,* *t, i*, Bodmin	2 0 0	— ...	...	0 1 0...	0 1 0	...Mar. 1874
4000	Trumpet Consols, *t*, Helston§	7 0 0	1¼...	1 1½	9 11 0...	0 10 0	...Nov. 1872
15000	Van, *l*, Llanidloes*	4 5 0	24 ...	22 24	13 9 6...	0 10 0	...Oct. 1874
3900	W. Chiverton, *l*, Perranzabuloe†§...	10 10 0	2½...	1½ 2½	52 10 0...	0 5 0	...June 1873
512	West Tolgus, *c*, Redruth	98 0 0	70 ...	68 70 xd...	2 5 0...	1 5 0	...Oct. 1874
2048	West Wheal Frances, *t*, Illogan	27 3 9	9½...	9 10	3 12 6...	0 5 0	...Oct. 1872
512	Wheal Basset, *c*, Illogan†	5 2 6	25 ...	20 25	638 10 0...	1 10 0	...Aug. 1872
4295	Wheal Kitty, *t*, St. Agnes	5 4 6	5¼...	5 5¼	11 17 0...	0 2 6	...Sept. 1874
896	Wheal Margaret, *t*, Uny Lelant§	15 17 6	— ...	...	82 2 3...	0 10 0	...May 1872
10000	Wheal Mary, *t*, St. Dennis*	5 0 0	— ...	...	0 1 0...	0 1 0	...Jan. 1873
80	Wheal Owles, *t*, St. Just§	76 5 0	75 ..	70 75	522 10 0...	4 0 0	...Aug. 1872
12000	Wheal Russell, *c*, Tavistock	1 0 0	— ...	...	0 3 9...	0 1 0	...Oct. 1874
10000	Wheal Whisper, *t, c*, Warleggan*...	1 0 0	— ...	...	0 1 6...	0 0 6	...May 1873
25000	Wicklow, *c, sul, i*, Wicklow	2 10 0	— ...	...	52 9 0...	0 2 6	...Mar. 1872

FOREIGN DIVIDEND MINES.

35500	Alamillos, *l*, Spain*†	2 0 0	2 ...	1½ 2	1 5 9...	0 2 0	...Sept. 1874
30000	Almada and Tirito Consol., *s**†	1 0 0	⅞...	⅝ ¾	0 4 3...	0 1 0	...May 1873
20000	Australian, *c*, South Australia†	7 7 6	1¼...	1¼ 1¾	0 11 6...	0 2 0	...July 1873
10000	Battle Mountain,* *c*, (6240 part pd.)	5 0 0	— ...	...	0 10 0...	0 10 0	...Nov. 1872
15000	Birdseye Creek, *g*, California*	4 0 0	2¾...	2 2¼	0 14 0...	0 2 6	...June 1874
6000	Bensberg, *l*, Germany*	10 0 0	— ...	...	0 17 4...	0 8 0	...July 1873
12320	Burra Burra,* *c*, So. Australia	5 0 0	— ...	...	56 0 0...	0 10 0	...Oct. 1872
20000	Cape Copper Mining,*† So. Africa..	7 0 0	28½...	27⅜ 28¼	17 15 0...	1 0 0	...Sept. 1874
40000	Cedar Creek, *g*, California*	5 0 0	1⅜...	1⅛ 1¼	0 5 0...	0 2 6	...June 1873
30000	Central American Association*†	0 16 6	— ...	...	0 6 0...	0 1 0	...July 1869
15000	Chicago, *s*, Utah*	10 0 0	— ...	...	0 16 0...	0 4 0	...Sept. 1873
21000	Colorado Terrible, *s-l*, Colorado*†	5 0 0	3¾...	3⅛ 3⅜	0 9 6...	0 1 6	...July 1874
76162	Don Pedro North del Rey*†	0 16 0	¼...	9s. 11s.	2 5 9...	0 2 0	...Mar. 1872
23500	Eberhardt and Aurora, *s*, Nevada*†	10 0 0	5 ...	4¾ 5⅛	1 0 0...	1 0 0	...July 1871
2352	Eldorado, *g*, Nova Scotia*	10 0 0	— ...	...	2 5 0...	0 15 0	...June 1873
60000	Emma,* *g, s*, Utah (25,000 fully pd.)	20 0 0	1⅜...	1¼ 1½	3 12 0...	0 6 0	...Dec. 1872
70000	English and Australian, *ct* 8. Aust.	2 10 0	1¾...	1½ 1¾	2 7 3...	0 2 6	...Mar. 1873
15000	Ferguson, *g*, California*	2 0 0	— ...	...	0 3 0...	0 3 0	...April 1872
30000	Flagstaff, *s*, Utah*	10 0 0	2 ...	1¼ 1½	4 2 0...	0 5 0	...July 1873
25000	Fortuna, *l*, Spain*†	2 0 0	5 ...	4¼ 4¾	4 6 10...	0 2 6	...Sept. 1874
30000	Gold Run, *hyd.*	1 0 0	½...	⅜ ⅝	0 2 4...	0 0 4	...Oct. 1872
68000	Kapunda Mining Co. Australia†	1 3 0	¼...	⅜ ½	0 2 4...	0 0 6	...June 1873
20000	Last Chance, *s*,* Utah	5 0 0	1½...	⅞ 1⅛	0 14 0...	0 2 0	...July 1873
15000	Linares, *l*, Spain*†	3 0 0	4¼...	3¾ 4¼	14 14 2...	0 3 4	...Sept. 1874
7837	Lusitanian, Portugal*† (£5 shares).	3 10 0	1¼...	¾ 1¼	1 11 6...	0 1 6	...Mar. 1873
15000	Mammoth Copperopolis of Utah, *c, s*	10 0 0	— ...	...	0 5 0...	0 5 0	...Dec. 1872
5000	Mountain Chief, *s*, Utah*	10 0 0	— ...	...	0 4 0...	0 4 0	...Jan. 1873
18000	Prussian Mining & Ironworks, *cl, i.*	30 0 0	— ...	...	6 0 0...	3 0 0	...July 1873
10000	Pontgibaud, *s-l*, France†	20 0 0	21 ...	19 21	15 16 8...	0 19 9	...June 1874
100000	Port Phillip, *g*, Clunes*†	1 0 0	¾...	⅝ ⅞	1 8 0...	0 1 0	...Jan. 1872
54000	Richmond Consols, *s*, Nevada*†	0 0 0	6¾...	6½ 7	1 16 6...	0 5 0	...July 1874
120000	Scottish Australian Mining Co.*† ..	1 0 0	1⅝...	1⅜ 1⅝	15 per cent.		...May 1874
112500	Sierra Buttes, *g*, California*†	2 0 0	2¼...	1⅞ 2⅛ xd...	1 8 0...	0 2 0	...Dec. 1873
60000	South Aurora, *s*, Nevada*	5 0 0	⅜...	½ ⅝	0 14 2...	0 2 0	...Nov. 1873
15000	Sweetland Creek, *g*, California*†	4 0 0	3 ...	2¾ 3	2 18 0...	0 2 0	...Sept. 1874
26000	Tolima, *g, s** (6000 sh. are £5 f. pd.)	4 0 0	3½...	3 3½	0 11 6...	0 6 6	...May 1874
500	Westphalian, *s-l, c*, Prussia*	20 0 0	— ...	...	54 0 0...20	0 0 0	...Dec. 1873
15000	Western Andes, *s** (8000 £5 fy. pd.)	3 10 0	3¼...	3 3¼	1 3 7...	1 0 0	...Aug. 1874

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, *g*, Victoria*	2 10 0	— ...	...	...Sept. 1872
20000	Australian United, *g*, Victoria*†	2 10 0	1½...	1¼ 1½	...Fully pd.
3000	Bellavista, *s*, Peru* (£10 shares)	10 0 0	— ...	...	...Fully pd.
30000	Blue Tent, *hyd.*, California	5 0 0	5½...	5 5¼	...Fully pd.
50000	Braganza, *g*, Brazil*†	0 15 0	— ...	...	...Oct. 1870
12000	Camp Floyd, *s*, Utah*	10 0 0	— ...	...	...Fully pd.
35000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	— ...	...	...Fully pd.
50152	Chontales, *g, s*, Nicaragua*† (and 12,542 of £1 15s.)	2 0 0	— ...	⅝... ⅜ ⅝	...Fully pd.
6000	Clifton, *s*, Colorado*	5 0 0	— ...	...	...Feb. 1872
10000	Crescent, *g*, Plumas County, California*	10 0 0	— ...	...	...Fully pd.
100000	Cuiaba, *g*, Minas Geraes, Brazil*	0 17 6	— ...	...	...June 1872
10000	Douglas, *s*, Georgetown, Col.	5 0 0	— ...	...	...Fully pd.
7500	East Sheboygan Preference* (40,000 ordinary shares)	2 0 0	— ...	...	...Fully pd.
35000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	— ...	...	...Dec. 1871
60000	Exchequer, *g, s*, California*	1 0 0	— ...	...	...Fully pd.
55000	Frontino and Bolivia, *g*, New Granada*†	2 0 0	— ...	⅛... ⅛ ⅝	...Fully pd.
50000	General Brazilian, *g**	1 0 0	— ...	...	...Fully pd.
10000	Goetzel Tunnel Co., Georgetown, Col.	7 0 0	— ...	...	...Fully pd.
40000	Holcombe Valley, *g*,* California	1 0 0	— ...	1⅛... 1 1⅛	...July 1873
6000	Hornachos,* *s-l*, (£10 shares)	9 0 0	— ...	...	...Jan. 1874
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	— ...	...	...Fully pd.
20000	Independence, *g*, California*	5 0 0	— ...	2¼... 1¾ 2¼	...Fully pd.
20000	I. X. L., *g, s*, California*	5 0 0	— ...	...	...Fully pd.
50000	Javali, *g*, Nicaragua*	2 0 0	— ...	⅛... ¼ ½	...Fully pd.
12000	Lanestosa,* *l, z*, Viscaya, Spain (£2 shares)	1 10 0	— ...	...	...Jan. 1874
65000	London and California, *g*†	2 0 0	— ...	¼ ½	...Fully pd.
75000	Malabar, *g*, Colombia* (65000 issued)	1 0 0	— ...	¾... ½ ¾	...Fully pd.
4000	Malaga, *l*, Spain*	10 0 0	— ...	...	...Fully pd.
40000	Malpaso, *g*, Colombia* (10000 pref. shares, 10s. paid)	1 0 0	— ...	⅞... ½ ¾	...Fully pd.
12000	Menzenberg, *c*, Honnef, Germany*	5 5 0	— ...	...	...Fully pd.
14000	Montague & Waverley Gold Quartz Crushing Co.,* N.Scot.	2 0 0	— ...	...	...Allotment
6000	Monte Loreto, *g, c*, Italy*	5 0 0	— ...	...	...Fully pd.
15000	New Pacific, *g, s*, Nevada*	0 7 6	— ...	⅜... ⅜ ½	...Jan. 1874
66000	New Quebrada, *c*, Venezuela*	5 0 0	— ...	3⅜... 3½ 3¾	...Fully pd.
50000	New Rosario, *s*, Mexico*	1 0 0	— ...	¾... ⅝ ¾	...Fully pd.
20000	New Zealand Kapanga, *g*, Coromandel*	5 0 0	— ...	3½... 3 3¼	...Fully pd.
10000	Newfoundland,* *l*	10 0 0	— ...	...	...Fully pd.
20000	North American, *g**	4 0 0	— ...	...	...Fully pd.
50000	Panulcillo, *c*, Chili*†	4 0 0	1 ...	⅜ 1	...Fully pd.
60000	Pestarena United, *g*, Italy*†	3 0 0	— ...	...	...Fully pd.
50000	Rica, *g*, Colombia* (40000 issued)	1 0 0	— ...	⅛... ⅛ ⅜	...Fully pd.
100000	Rio Tinto,* *c*, Huelva, Spain	9 0 0	9 ...	8 9	Jan. 1874
100000	Rossa Grande, *g*, Brazil*† (£1 shares)	0 19 0	— ...	¼... ⅛ ¼	...July 1872
32500	Ruby Consolidated, *s*, Nevada*	10 0 0	— ...	... 6½ 7	...Fully pd.
30000	Russia, *c*, Orenburg and Uta*†	10 0 0	3 ...	2¼ 2¾	...Fully pd.
25000	San Pedro, *c*, Chili*	2 0 0	— ...	...	...Fully pd.
30000	Santa Barbara,* *g*, Brazil	0 7 6	— ...	⅞... ⅛ ⅞	...Mar. 1872
10000	Silver Plume, *s*, Colorado*	1 0 0	— ...	...	...Fully pd.
37500	Snowdrift, *s*, Colorado*	2 0 0	— ...	...	...Fully pd.
£253000	St. John del Rey*† (£5 stock and its multiples can be dealt in)		... 245	... 240 245	..."Stock"
26000	St. Lawrence, *g*,* California	5 0 0	— ...	...	...Fully pd.
25000	Star of Nevada, *s** (12000 issued)	2 0 0	— ...	...	...Fully pd.
30000	Tecoma, *s*, Utah*	10 0 0	— ...	½... ⅜ ½	...Fully pd.
20000	Thornhill Reef, *g*, Australia*	1 0 0	— ...	½... ¼ ½	...Fully pd.
43174	United Mexican, *s*, Mexico*†‡	28 7 8	..	2½... 2½ 2⅝	...May 1868
14000	Utah, *g, s-l*, Utah*	5 0 0	— ...	— ... ½ ¾	...Fully pd.
25000	Victoria (London)*, *g*, Australia (25,000 sh. 16s. pd.)‡	1 0 0	— ...	⅜... ⅛ ⅜	...Fully pd.
75000	Yorke Peninsula, *c*, South Australia	1 0 0	— ...	⅜... ⅜ ⅝	...Fully pd.

§ Have made calls since last dividend was paid.

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.
25000	Aberdaunant, *l*, Llanidloes*	1 0 0...	1⅜...	1¼ 1⅜
10000	Aberystwith,* *s-l*, Cardigan	4 0 0...	— ...	...
12000	Assheton, *l*, Carnarvonshire*	5 0 0...	1¾...	1¼ 1¾
50000	Ballycummisk,* *c*, Schull	2 0 0...	— ...	...
12000	Bedford Consols, *c*, Tavistock	1 7 0...	— ...	...
12000	Bedford United, *c*, Tavistock	1 17 6...	1 ...	¾ 1
25000	Belstone,* *c*, Devon (3000 sh. 7s.6d. pd.)	1 0 0...	2 ...	1½ 2
5000	Blue Hills, *t, c*, St. Agnes	2 4 6...	— ...	...
15000	Bog, *l*, Shropshire*	2 0 0...	⅜...	⅛ ¼
12000	Bowden Hill,* *mn* (7000 sh. £1 pd.)...	0 15 0...	— ...	...
20000	Brynambor, *l*, Cardigan	1 0 0...	— ...	...
30000	Burrow& Butson,* *t, c, bl*, St. Agnes	1 0 0...	— ...	...
20000	Burra Burra,* *t, c, bl*, Kenwyn	1 0 0...	— ...	...
5468	Bwadrain, *s-l*, Cardigan* (£4 shares).	3 16 0...	— ...	...
4896	Bwlch Consols, *s-l*, Cardigan*‡ (£5 sh.)	4 17 6...	— ...	...
12000	Cae Gynon, *l*, Cardiganshire*†	2 0 0...	— ...	...
30000	Caldbeck Fells, *l*, Cumberland*...	2 0 0...	— ...	...
600	Carden* (£10 shares)	0 2 11...	0 0 5	...Feb. 1874
5584	Carn Camborne, *c, t*, Camborne	5 3 6...	¾...	⅛ ¾
10000	Castle Gate, *t*, St. Colomb*	1 0 0...	— ...	...
10000	Cathedral, *t, c*, Gwennap*	1 10 0...	1⅛...	⅞ 1⅛
3000	Cefn Brwyno (lim. to £5)	5 0 0...	— ...	...
10000	Central Van,* *l, bl*, Llanidloes	5 0 0...	— ...	...
24000	Court Grange, *s l*, Cardiganshire	0 15 0...	⅞...	¾ ⅞
24051	Crenver & Abraham*† (25949 sh. £1).	2 0 0...	¾...	¼ ½
15000	Cwm Rychan,* *s.l.*, Montgomery	1 0 0...	— ...	...
15000	Cwm Nant Ddu,* *l*, Montgomery	1 0 0...	— ...	...
10000	Cwm Ricket and Maesnant, *l*, Mont.*	2 11 0...	— ...	...
256	Cwmystwith, *l*, Cardiganshire‡	60 0 0...	— ...	...
15000	Deer Park, *t, c*, Tavistock	2 0 0...	— ...	...
7500	Denbighshire Consolidated, *l**	3 0 0...	3 ...	2½ 3
656	Ding Dong, *t*, Gulval	49 14 6...	— ...	...
12000	Dolwen Consols, *l*, Cardigan*	1 0 0...	— ...	...
10000	Duchy Great Consols, *c*, Calstock	3 0 0...	— ...	...
10000	Dunsley W. Phœnix, *t*, Linkin.*	2 0 0...	— ...	...
15000	Dyliffe,* *l*, Montgomeryshire	6 0 0...	— ...	...
512	East Basset, *c*, Redruth†‡	73 10 0...	9 ...	8 9
800	East Black Craig,* *l.*, Scotland	25 0 0...	— ...	...
3000	East Boscaswell, *t*, St. Just	5 0 0...	— ...	...
6000	East Bottle Hill Cons., *t, c*, Plympton	3 0 0...	— ...	...
4000	East Chiverton, *l*, Perranzabuloe	6 5 0...	1⅜...	1¼ 1⅜
3000	East Dolcoath, *t*, Illogan	10 0 0...	— ...	...
6000	East Grenville, *c*, Camborne	6 16 6...	½...	¼ ½
4000	East Gunnislake and So. Bedford, *c.*.	13 13 0...	— ...	...
50000	East Llangynog, *l*, Montgomery*	2 0 0...	— ...	...
30000	E. Nant-y-mwyn,* *l*, Brecknockshire.	1 0 0...	— ...	...
15000	East Van, *t*, Llanidloes*	5 0 0...	1 ...	¾ 1
20000	Elgar,* *s-l*, Cardigan	1 0 0...	— ...	...
12800	Excelsior, *t, c*, Stoke Climsland	0 10 6...	— ...	...
5000	Flintshire,* *l*	6 0 0...	— ...	...
12800	Florence and Tonkin United* *l.*	0 10 0...	— ...	...
10000	Franco Consols, *t, c**	1 0 0...	— ...	...
5000	Frank Mills, *l*, Christow	4 16 0...	¾...	⅝ ¾
8000	Fronvellan, *l*, Mont.* [4000 sh. fy. pd.]	0 15 0...	— ...	...
18000	Furze Hill,† Tavis.*	1 0 0...	— ...	...
3950	Gawton, *c*, Tavistock	3 15 0...	⅝...	⅜ ⅝
5000	Gem, *t*, Whitchurch	2 10 0...	— ...	...
12500	Gilfach, *s-l*, Llangadock	2 0 0...	— ...	...
10000	Glan Severn, *s-l*, Flintshire	1 0 0...	— ...	...
15000	Gobbett, *t*, Dartmoor	1 0 0...	1⅜...	1¼ 1⅜
12000	Goginan, and Level Newydd, Card., *l*	1 5 0...	— ...	...
7500	Gorsedd and Celyn Level, *l*, Flint	2 0 0...	1½...	1 1¼
10000	Great Mountain, *s-l*, Carnarvon*	1 0 0...	— ...	...
2000	Great Retallack, *s-l, b*, Perranzabuloe	3 8 0...	— ...	...
4400	Gt. West Chiverton, *s-l* (8000 shares).	2 10 0...	— ...	...
4096	Great Wh. Lovell, *t*, Wendron	2 15 0...	— ...	...
18000	Grosvenor,* *l*, Halkin	1 0 0...	— ...	...
10240	Gunnislake (Clitters'), *t, c*	5 5 0...	1½...	1⅛ 1¼
12000	Islay, *l*, Scotland*	1 0 0...	— ...	...
6000	Keswick United, *l**	5 0 0...	— ...	...
6000	Killifreth, *t*, Chacewater	1 2 0...	¼...	⅛ ¼
50000	Kingston Valley, *l*, Cornwall	1 0 0...	1¼...	1⅛ 1¼
12000	Ladywell,* *l*, Salop	2 10 0...	3 ...	2¾ 3
2500	Levant, *c, t*, St. Just	8 10 0...	— ...	...
10000	Llanarmon, Denbigh	2 0 0...	— ...	...
20000	Llanidloes Wh. Van,* *l*, Montgomery	1 0 0...	— ...	...
30000	Llanrwst, *l*, Carnarvon	2 0 0...	2½...	2¼ 2½
17000	Llywernog, *l*, Cardiganshire	0 16 0...	— ...	...
9000	Marke Valley, *c*, Caradon*	4 18 6...	1⅛ ..	⅞ 1
6000	Medlyn Moor, *t*, Wendron	0 12 10..	— ...	...
8000	Mellanear, *c*, Hayle*	4 0 0...	— ...	...
25000	Mount Dalby, *s-l*, Isle of Man*	1 0 0...	— ...	...
6144	Nangiles, *t, c*, Kea	9 14 0...	½...	¼ ½
4000	Nanty, *l*, Montgomeryshire*	1 0 0...	— ...	...
2000	Nant y-Ricket,* *c, l*, Montgom.	5 0 0...	— ...	...
10000	New Beldon, *l*, Northumberland*	1 0 0...	— ...	...
8000	New Dolcoath, *t, c*, Camborne*	3 0 0...	1⅛...	1 1⅜
4096	New East Lovell, *t*, Wendron	0 10 0...	— ...	...
2000	New Hendra, *t*, Breage	2 1 0...	1 ...	⅞ 1
6000	New Hobb's Hill, *t*, Liskeard*	2 0 0...	— ...	...
6400	New Pembroke, *t, c*, Par Station	5 4 6...	1 ...	⅞ 1
5000	New Rosewarne, *c*, Gwinear	4 12 0...	¾...	¼ ¾
3000	New Silver Rake, *s,l*, Flintshire	5 0 0...	— ...	...
3200	New South Merlin, *l*, Flint*	2 10 0...	— ...	...
5000	New St. Blazey,* *t*, Cornwall	0 17 6...	— ...	...
1200	New West Rosewarne, *t*, Gwinear	8 10 0...	1½...	1 1⅜
4000	New Wh. Grylls, *t*, Perranuthnoe	0 16 6...	— ...	...
1200	New Wh. Seton, *c*, Camborne	36 16 8...	⅝ ..	½ ⅝
25000	North Laxey*	2 0 0...	— ...	...
20000	North Prince Patrick,* *l*, Holywell	1 0 0...	1¾...	1 1¾
2000	North Wheal Towan, *t, c*, Illogan	1 19 6...	— ...	...
10000	North Pool, *c*, Illogan*(Reserve 2500)	2 0 0...	⅜...	¼ ½
1000	North Rosewarne, *c*, Gwinear	6 12 6...	2 ...	1¾ 2
8000	North Treleigh Wood, *t*, Redruth*	1 0 0...	1 ..	¾ 1
5936	North Treskerby, *c*, St. Agnes	3 8 10..	1⅛...	1 1⅜
2000	Old Batholes,* *l*, Salop	1